The Fight of the IMF against Corruption in Developing Countries

A Quantitative Assessment of Conditionality Using an Instrumental Variable Approach

Master Thesis
International Public Management and Public Policy
Erasmus School of Social and Behavioural Sciences

Name: Babette Manders
Student ID: 666928
Date of completion: 11-10-2024
Word count: 11835

Supervisor and First Reader: Dr. Pieter Tuytens
Second Reader: Dr. Clara Egger

Abstract

The International Monetary Fund (IMF) has become a central player in addressing corruption within developing countries, primarily through anti-corruption conditionalities attached to its financial assistance programs. These conditions emphasise enhancing transparency and accountability, viewed as critical in curbing corrupt practices. Grounded in the principal-agent theory, which frames corruption as a consequence of misaligned incentives between agents (political leaders) and principals (citizens), the IMF's approach aims to realign these incentives. To test the effectiveness of these anti-corruption conditionalities, this study employed a quantitative analysis using an instrumental variable approach to assess their impact on corruption levels across 119 countries from 1997 to 2018. A novel methodology developed by Angin et al. (2024) involving automated text analysis was used to identify and categorise IMF anti-corruption conditions more accurately. The findings indicate that these measures initially lead to increased corruption scores, likely because heightened transparency and accountability have made corrupt practices more visible. This study offers valuable insights into the role of international organisations in promoting good governance and offers policy recommendations for effective implementation strategies.

Keywords: IMF (International Monetary Fund), conditionality, corruption, anti-corruption, transparency, accountability, instrumental variable, principal-agent theory

Acknowledgements

The journey of writing this thesis would not have been possible without all the support I received over the last few months. Therefore, I would like to express my gratitude to the following people.

First, I am sincerely grateful to my supervisor, Dr. Pieter Tuytens, for his thoughtfulness, expertise and especially his support throughout the whole process. Without his valuable feedback, this thesis would not have been able to take the form it has today. Furthermore, I would like to thank Dr. Clara Egger for taking the time to read and review this thesis. I also would like to express my appreciation to my family, friends, roommates, and peers. Their unconditional support meant a lot to me and kept me motivated throughout this ride. With them believing in me for this whole time, my spirits were kept high. Last, I want to thank my boyfriend for his ongoing mental support, love and understanding.

Table of Contents

List of figures and tables

List of abbreviations

IMF	International Monetary Fund
OECD	Organisation for Economic Cooperation and Development
SSA	Sub-Saharan Africa
CIS	Commonwealth of Independent States
NABU	National Anti-Corruption Bureau of Ukraine
V-DEM	Varieties of Democracy
2SLS	Two-Stage Least Squares
MONA	Monitoring of Fund Arrangements
NLTK	Natural Language Toolkit
GDP	Gross Domestic Product
TI	Transparency International
VIF	Variance Inflation Factor

1. Introduction

Corruption, widely defined as the 'abuse of public office for private gain' (Klitgaard, 1988), is pervasive in developing countries (Svensson, 2005; Olken & Pande, 2012). In addition to its effects on areas such as governance, political stability and social welfare, corruption is closely linked to economic growth, often impacting economic progress through inefficiencies and resource misallocation (Olsson, 2014; Pulok & Ahmed, 2017). While typically seen as detrimental to economic development, some scholars argue it can enhance growth under certain conditions by bypassing bureaucratic inefficiencies (Huntington, 1968; Halkos & Tzeremes, 2010). For instance, bribery allowed railroad companies to circumvent bureaucratic bottlenecks, fast-tracking the expansion of infrastructure and industrial development that may have otherwise been stalled by the slow pace of governmental approval and regulatory processes (Shabbir et al. 2016).

However, numerous studies agree that corruption negatively impacts economic growth (Tanzi, 1997; Blackburn, 2012). Mauro (1995) highlights that corruption shifts government priorities, diverting resources from public objectives to private interests, leading to societal deadweight loss. Furthermore, Castro & Nunes (2013) argue corruption discourages both domestic and foreign investment by fostering unpredictable environments and raising the cost of doing business. Besides, corruption can lead to an erosion of trust, exacerbating the problem as it discourages civic participation, reduces compliance with laws, and undermines the effectiveness of policy reforms (Olsson, 2014). As a result, corruption persists, trapping societies in a vicious cycle of underdevelopment and inequality (Mauro, 2004).

Despite recognising these detrimental effects, successive governments in developing countries have made minimal efforts to hold corrupt rulers accountable due to poor regulation and ineffective sanctions, further entrenching barriers to development (Bakre, 2007; Otusanya, 2011). This issue has been a key concern for international organisations such as the Organisation for Economic Cooperation and Development (OECD), the World Bank, Transparency International (TI), and the International Monetary Fund (IMF), as these institutions are committed to fostering global economic stability and development (Castro & Nunes, 2013). As a result, combatting corruption has become a primary focus in international policy discussions (Berkman et al. 2008). Yet, despite this growing attention, questions remain regarding the effectiveness of these anti-corruption measures (Min, 2019). Critics argue that international institutions fail to account for individual countries' unique socio-political and economic contexts and thereby fail to address the root causes of corruption (Persson et al. 2010; Mungiu-Pippidi, 2011).

One of the prominent actors in the fight against corruption is the IMF. Corruption jeopardises the financial and fiscal stability of borrowing nations, undermining their ability to manage debt and meet their loan obligations to the IMF. To address these risks and as part of its mission to maintain global

financial stability, the IMF provides financial assistance to countries in crisis, often with specific reform requirements known as 'conditionalities' (Bird, 2011; Babb & Kentikelenis, 2018). Part of these conditionalities are anti-corruption measures, which are aimed at enhancing transparency and accountability within governance structures (IMF, 1997).

Despite ongoing debates about the impact of international institutions' anti-corruption efforts, the IMF significantly promotes such measures. However, there remains a substantial lack of research on the effectiveness of the IMF's anti-corruption conditionalities in developing countries (Angin et al. 2024). Ataman (2022) examined the effects of structural conditionalities on corruption but found no significant results, recommending future studies differentiate between various types of conditionalities, as their impacts are not uniform and can vary considerably. Furthermore, Reinsberg, Stubbs, Kentikelenis, & King (2019) argue that conditionalities related to privatisation can increase corruption. However, no research to date has isolated anti-corruption conditions from other types of conditionality to assess their unique effects on corruption in developing countries. This study aims to address this gap by focusing exclusively on the IMF's anti-corruption conditionalities. By offering a more precise understanding of how increased transparency and accountability at the governance level affect corruption levels, it aims to contribute to the broader evaluation of international institutions' efforts to combat corruption. This leads to the formulation of the following research question:

What is the effect of the IMF's anti-corruption conditions in developing countries, and what does this reveal about the effectiveness of international institutions in combating corruption?

To answer this question, this research draws on the principal-agent theory, a framework providing a lens to understand the mechanisms through which IMF conditionalities may impact corruption. A quantitative analysis is performed using a two-stage least squares (2SLS) regression. The research utilises the instrumental variable defined by Stubbs et al. (2018), corresponding to the interaction term of the within-country average conditions and the IMF's liquidity ratio.

The academic relevance of this thesis lies in its potential to contribute to the ongoing debate on the role of international institutions in combating corruption in developing countries. While the IMF, as a lender of last resort, holds unique leverage to impose anti-corruption measures, the specific strategies and effectiveness of its anti-corruption conditionalities remain underexplored (Angin et al. 2024). Additionally, this study contributes to the broader theoretical framework of the principal-agent theory, applying it to international financial governance and exploring how increased transparency and accountability can realign incentives to reduce corruption.

Moreover, this research is socially relevant as anti-corruption measures are a critical component of the IMF's good governance initiatives. The IMF claims that its good governance framework effectively contributes to reducing corruption and promoting transparency within borrowing countries (IMF, 2018). By investigating how these measures impact corruption levels in developing countries, this research shows the real-world implications of IMF policies and answers questions about their good governance approach. Furthermore, this research addresses the broader societal implications of corruption. Corruption often diverts resources from essential public services such as healthcare, education, and infrastructure, disproportionately affecting the most vulnerable populations (Coetzee, 2014). By studying the effectiveness of anti-corruption measures, this research contributes to efforts aimed at promoting equitable development in societies burdened by corruption.

The remaining chapters of this thesis are organised as follows: section 2 presents the theoretical framework, section 3 outlines the methodology, section 4 summarises the results, and section 5 discusses the key findings. Section 6 concludes with the main insights and implications of the study, while section 7 provides practical policy recommendations for policymakers and researchers.

2. Theoretical framework

The following section provides a comprehensive overview of the relevant literature supporting the study's exploration of the relationship between IMF anti-corruption conditions and corruption levels in developing countries. It starts by introducing conditionality and outlining the structure of the IMF's anti-corruption measures. Additionally, the principal-agent theory is analysed as a key theoretical framework through which international institutions seek to combat corruption, followed by a critical assessment of its effectiveness, particularly in response to critiques of its one-size-fits-all application. This discussion serves as the foundation for the conceptual framework.

2.1. Introduction to conditionality

Established in 1944 to promote international monetary cooperation, facilitate trade, foster economic growth, and maintain exchange rate stability, the IMF has since expanded its mandate to address a broader range of economic challenges. Today, the IMF's mission goes beyond promoting global financial stability, focusing also on strengthening individual economies through policy advice, technical assistance, and support (House et al. 2016). Acting as a lender of last resort, the IMF intervenes during economic crises by providing financial assistance to countries facing severe fiscal and economic instability. As part of these lending practices, the IMF imposes conditionalities, which require borrowing countries to implement specific reforms aimed at stabilising economies and improving governance (Barro & Lee, 2005). The IMF maintains that conditionality is essential for enabling countries to resolve balance of payments problems while preserving national and international economic stability, thus ensuring their capacity to repay loans. This approach safeguards resources for future use while promoting the achievement of agreed-upon policy objectives in financing and non-financing programs (IMF, 2023a). Initially meant for all member countries, the IMF's focus shifted towards developing nations in response to the debt crisis of 1982 (Oberdabernig, 2013).

2.2. Structural conditionality

In its financial assistance programs, the IMF distinguishes between two types of conditions: quantitative and structural. Quantitative conditions establish specific numerical targets that countries must meet, allowing governments the flexibility to devise their strategies for achieving these objectives (Chletsos & Sintos, 2021). Structural conditions, on the other hand, are more prescriptive and focus on specific policy reform, often requiring deep and systemic changes in areas such as public financial management, legal and regulatory frameworks, and institutional capacity (Goldstein, 2000).

Although primarily aimed at promoting long-term economic stability, structural conditions also serve as instruments for advancing 'good governance', with a particular focus on reducing corruption within governmental and institutional frameworks (IMF, 2018; Reinsberg, Stubbs, Kentikelenis, & King, 2019). Recognising the interconnectedness of governance and economic outcomes, the IMF took a significant step in 1997 by publishing a formal policy on good governance. As part of this policy, the IMF started emphasising combating corruption through targeted anti-corruption conditions aimed at safeguarding its resources and ensuring the success of its economic programs (IMF, 1997). For example, in 2000, the IMF announced a focus on reducing corruption in the Baltic countries and Commonwealth of Independent States (CIS), where post-Soviet governance systems often suffer from entrenched corruption and weak institutional frameworks due to poor transparency and rule of law (Wolf & Gürgen 2000). In 2002, the IMF also intensified efforts in Sub-Saharan Africa (SSA), where corruption in sectors like oil and natural resources has historically posed challenges (Scott, 2011). However, 20 years after the initial policy, the IMF acknowledged the need for further guidance from the Executive Board as after global events, such as the 2007-2008 financial crisis, attention from anti-corruption efforts was diverted. Although Kentikelenis et al. (2016) argue attention on institutional reform reversed again in the years after the crisis, the IMF found a new policy to reinforce the 1997 one needed, which was therefore introduced in 2018 (IMF, 2018).

2.3. Anti-corruption conditions

To assess the effectiveness of the IMF's anti-corruption conditionalities, it is crucial to understand how these measures are formulated and implemented. Like many international institutions, the IMF's efforts against corruption are designed to reduce opportunities for rent-seeking, where individuals exploit their positions for personal gain, activities widely recognised as detrimental to economic development (Gaspar & Hagan, 2016; Reinsberg, Stubbs, Kentikelenis, & King, 2019). The IMF primarily addresses these issues by enhancing accountability and transparency at governance levels, aiming to strengthen the legal and regulatory frameworks within its member countries (IMF, 1997; IMF, 2018; Angin et al. 2024). This strategy reflects a broader, cross-institutional approach to combating corruption; other major organisations, including the United Nations and the World Bank, also employ transparency and accountability measures to mitigate corrupt practices (Harrison, 2006; Walton & Jones, 2017).

Central to this strategy is enhancing transparency within governmental institutions, regulatory bodies, and political elites. For example, this approach involves refining auditing mechanisms, improving customs procedures, and requiring the publication of audited financial statements (Ataman, 2022; IMF, 2023b; Azcárraga et al. 2022). Besides, these measures are intended to foster a more open and accountable governance system, where the misuse of public resources becomes increasingly difficult to conceal. By holding individuals and institutions accountable for their actions, the IMF seeks to reduce

opportunities for rent-seeking and corruption, thereby cultivating an environment that supports the principles of good governance (IMF, 2018).

As previously noted, the IMF's anti-corruption efforts focus primarily on the upper levels of governance, given their direct influence on macroeconomic policies, such as the transparency of government financial accounts. Consequently, it is argued that the IMF specifically targets political corruption, characterised by the abuse of power by those responsible for formulating and enforcing societal rules and regulations, including lawmakers and senior officials involved in resource allocation (Ataman, 2022; Kolstad & Wiig, 2009).

2.4. Principal-agent

The IMF's focus on transparency and accountability is rooted in the belief that these principles are critical for reducing corruption in member countries (IMF, 1997). This approach is grounded in the principal-agent theory, a key framework in political science and economics, particularly in the study of corruption (Rose-Ackerman, 1999; Robert Klitgaard, 1988). Understanding the dynamics of the principal-agent theory helps clarify how IMF conditionality can reduce corruption in developing countries. The theory explains that corruption arises when an agent (political ruler) prioritises their self-interest over the principal's (citizen) interest. This results from a misalignment of interests between principals and agents exacerbated by information asymmetry and inadequate oversight. Information asymmetry allows agents to hide their actions from the principals, creating opportunities for corrupt behaviour. Moreover, corruption is further enabled when agents can exploit their discretionary power without sufficient accountability.

The theory suggests that reducing corruption requires limiting the opportunities for corrupt behaviour by reducing information asymmetry and aligning the agents' incentives with the interests of the principals (Rothstein, 2018). Transparency plays a critical role in this process by increasing the visibility of government actions and financial transactions, making it more difficult for agents to misuse power without detection, thereby reducing information asymmetry. At the same time, accountability reinforces this by holding agents responsible for their actions, leading to better oversight. Besides, when agents know they will be held accountable, their incentives are more likely to align with the interests of the principals (Shleifer & Vishny, 1993).

Various research supports this framework. Kaufmann and Bellver (2005) imply that increased transparency can significantly enhance the capacity of civil society and the public to monitor government actions, leading to reductions in corruption. Their study indicates that transparency reforms, such as the disclosure of government financial information and the adoption of Freedom of Information

laws, provide citizens with the tools necessary to scrutinise government behaviour. This, in turn, reduces information asymmetry and enhances public oversight. Besides, Everett et al. (2007) argue that accountability mechanisms, such as independent anti-corruption agencies, judicial oversight, and media scrutiny, enhance the likelihood of detecting and punishing corrupt behaviour and thereby limit the discretionary power of agents.

2.4.1. Empirical evidence

Building on the theoretical principles discussed, Ferraz & Finan (2008) provide empirical evidence from Brazil demonstrating that transparency and accountability can reduce corruption. Their study shows that when credible information about corrupt activities is publicly disclosed, it leads to the electoral defeat of corrupt politicians, ultimately promoting greater accountability and lower levels of corruption. Similarly, Reinikka & Svensson (2005) found that in Uganda, when the government made information about educational grants transparent and easily accessible, it empowered local communities to monitor the fund allocation. This oversight reduced the misappropriation of resources, illustrating how increased transparency can decrease corruption. These examples support the effectiveness of transparency and accountability in combating corruption and align with the IMF's strategy of leveraging these principles. Therefore, the IMF's approach has the potential to produce similar outcomes in other developing countries, fostering institutional reforms and reducing opportunities for corrupt behaviour.

2.4.2. Dual impact

Some scholars imply that interpreting transparency and accountability measures as straightforward solutions to corruption can be misleading, as these approaches may inadvertently expose underlying issues. Cole (2015) suggests initiatives reducing information asymmetry can unintentionally reveal corrupt activities previously hidden or normalised. As a result, although corruption may decrease, the increased visibility of corruption could give the impression it has worsened. Likewise, Brusca et al. (2018) argue that while transparency and accountability can foster a more transparent government, they can sometimes foster the idea of higher corruption by bringing previously unnoticed corrupt behaviours into the public eye. However, Chen and Neshkova (2019) present empirical evidence refuting these arguments. Building on the principal-agent perspective, their analysis of 95 countries shows that increased fiscal transparency significantly reduces perceptions of corruption in the early stages of the budget process, with the effect becoming more pronounced in later stages. Nevertheless, this highlights the complexity surrounding the interpretation of transparency and accountability measures in assessing corruption levels.

2.5. Criticism

While the principal-agent theory provides a robust framework for understanding how transparency and accountability can reduce corruption, its practical application has faced some criticism. Critics argue that international institutions like the IMF often apply anti-corruption measures rooted in the principal-agent theory as standardised 'toolkits,' overlooking the importance of adapting to local contexts (Levy & Kpundeh, 2004). This standardised approach assumes that the misalignment of interests between principals and agents can be uniformly addressed, but scholars argue that ignoring local circumstances leads to ineffective results (Gephart, 2009; Persson et al. 2010).

Rothstein (2011) and Stiglitz (2002) criticise the IMF and others for adopting a 'one-size-fits-all' strategy, applying standardised anti-corruption measures across countries without considering specific political and economic contexts. These standardised measures are largely derived from the Washington Consensus, which promotes uniform policy prescriptions like liberalisation, deregulation, and privatisation. Grounded in Western economic principles, this approach assumes these strategies are the key to driving economic growth and will be effective everywhere, regardless of local differences (Steinwand & Stone, 2008; Kaya & Reay, 2019).

However, research consistently shows that for anti-corruption efforts to be effective, tailoring to a country's specific economic and political system is necessary, and will result in more sustainable and meaningful reforms (Mungiu-Pippidi, 2011; Heeks & Mathisen, 2012). For instance, in nations with weak institutions or authoritarian regimes, political leaders remain insulated from meaningful oversight, facing little resistance to their actions. Here, more tailored approaches are crucial to breaking through these barriers, ensuring that reforms directly target the root causes of corruption within the existing power structures (Montinola & Jackman, 2002). Similarly, countries with lower economic development and limited trade openness are less subject to international standards and external scrutiny. Therefore, tailoring anti-corruption strategies to fit their specific economic conditions is essential to create reforms that resonate with local dynamics, making them more impactful and sustainable (Sandholtz & Gray, 2003).

To enhance the effectiveness of its anti-corruption measures, the IMF must therefore adapt its conditions to the specific contexts of individual countries, aligning agents' interests with those of the principals (Heeks & Mathisen, 2012). Contrary to criticisms of a 'one-size-fits-all' approach, the IMF acknowledges that corruption varies across countries and emphasises the importance of context-sensitive reforms (IMF, 1997). This shift is evident in its move away from broad structural reforms, such as those of the Washington Consensus, toward more flexible and nuanced strategies (Pender, 2001; Brown, 2009).

According to Joyce (2003), this more nuanced approach has improved outcomes in addressing corruption, demonstrating the value of integrating local conditions into reform efforts. For instance, the IMF increasingly emphasises 'ownership', involving local governments and stakeholders in designing and implementing conditionalities, recognising that aligning reforms with local political and economic realities is crucial. By fostering local ownership and tailoring reforms to each country's unique circumstances, the IMF aims to move beyond standardised policies, enhancing the implementation and impact of its anti-corruption initiatives (Bird & Willett, 2004). A more specific example is the case of Ukraine, where the IMF supported the establishment of the National Anti-Corruption Bureau of Ukraine (NABU) to address the country's specific corruption challenges. Before NABU, Ukraine's state institutions were compromised by political influence, making effective prosecution of corruption nearly impossible. NABU was thus created as an independent body to operate outside the influence of these compromised institutions, directly targeting high-level corruption through an autonomous agency with prosecutorial powers (IMF, 2016).

In conclusion, while the IMF and other international institutions have been criticised for following the principles of the principal-agent theory without considering local context, several research demonstrates that the IMF has increasingly adapted its anti-corruption measures to local circumstances, moving beyond rigid, standardised reforms. This shift enhances the effectiveness of its anti-corruption efforts and holds greater potential for reducing corruption across varying contexts.

2.6. Hypothesis

The IMF tries to combat corruption by increasing transparency and accountability within governance structures in developing countries. Research suggests that the principal-agent theory provides a foundational understanding of how transparency and accountability can reduce corruption by aligning the interests of political agents with those of the public. However, critics point out the limitations of international institutions applying these measures without adapting them to local contexts. As the literature suggests, the IMF has increasingly shifted towards context-sensitive reforms, reinforcing the expectation that IMF anti-corruption conditionalities can effectively reduce corruption in developing countries. Based on the literature and theoretical frameworks discussed, the following hypothesis is proposed.

Hypothesis 1*: 'IMF anti-corruption conditions are negatively related to corruption in developing countries'.*

3. Research design

To examine the effectiveness of IMF anti-corruption conditions in developing countries, a comprehensive research design is adopted. The analysis covers a sample of 119 countries spanning from 1997 to 2018. This timeframe was selected due to the IMF's focus on anti-corruption initiatives from 1997 onwards and the lack of sufficient data before and after this period.

3.1. Operationalisation

3.1.1. Independent variable

Data on the independent variable in this study, IMF anti-corruption conditionality, can be sourced from the IMF's database of conditionality, known as the Monitoring of Fund Arrangements (MONA). Compiled by the IMF's Policy Development and Review Department, this database has faced criticism for its heavy reliance on the Fund's subjective assessment in categorising conditions (Arpac et al. 2008; Kentikelenis et al. 2016). In response to this criticism, Kentikelenis et al. (2016) developed a new IMF conditionality dataset, which scholars have widely adopted for evaluating and categorising IMF conditionality (Reinsberg, Kentikelenis, & Stubbs, 2019; Reinsberg, Stubbs, Kentikelenis, & King, 2019; Kern et al. 2019; Ataman, 2022; Bomprezzi & Marchesi, 2023).

The dataset was derived from an extensive review of IMF loan agreements and related documents spanning 1985 to 2019. Primary sources included IMF staff reports, Letters of Intent and accompanying Memoranda of Economic and Financial Policies submitted by borrowing countries. These documents, regularly updated throughout the loan period, often added new conditions during each review. Researchers meticulously extracted the text of all conditions from these documents, ensuring comprehensive inclusion. The process involved extracting 55,465 individual conditions from 4,590 documents across 131 countries. Special care was taken to maintain data reliability through multiple stages of coding, discussions to resolve uncertainties, and a conservative approach to avoid overestimating conditionality. The result was a comprehensive new data set on IMF conditionality, containing raw text data for the IMF conditions with clear and succinct descriptions, serving as the foundation for further analysis. For a detailed account of the precise coding methodology, the reader could consult the accompanying codebook (Kentikelenis et al. 2023).

Furthermore, research by Angin et al. (2024) has also highlighted significant shortcomings in the IMF's categorisation of conditions, specifically those of anti-corruption conditions. They argue that the economic descriptor for anti-corruption measures, coded as 11.4 and labelled 'anti-corruption legislation/policy', is limited in scope. Due to the politically sensitive nature of this topic, the MONA database significantly underreports the number of anti-corruption measures included in IMF programs.

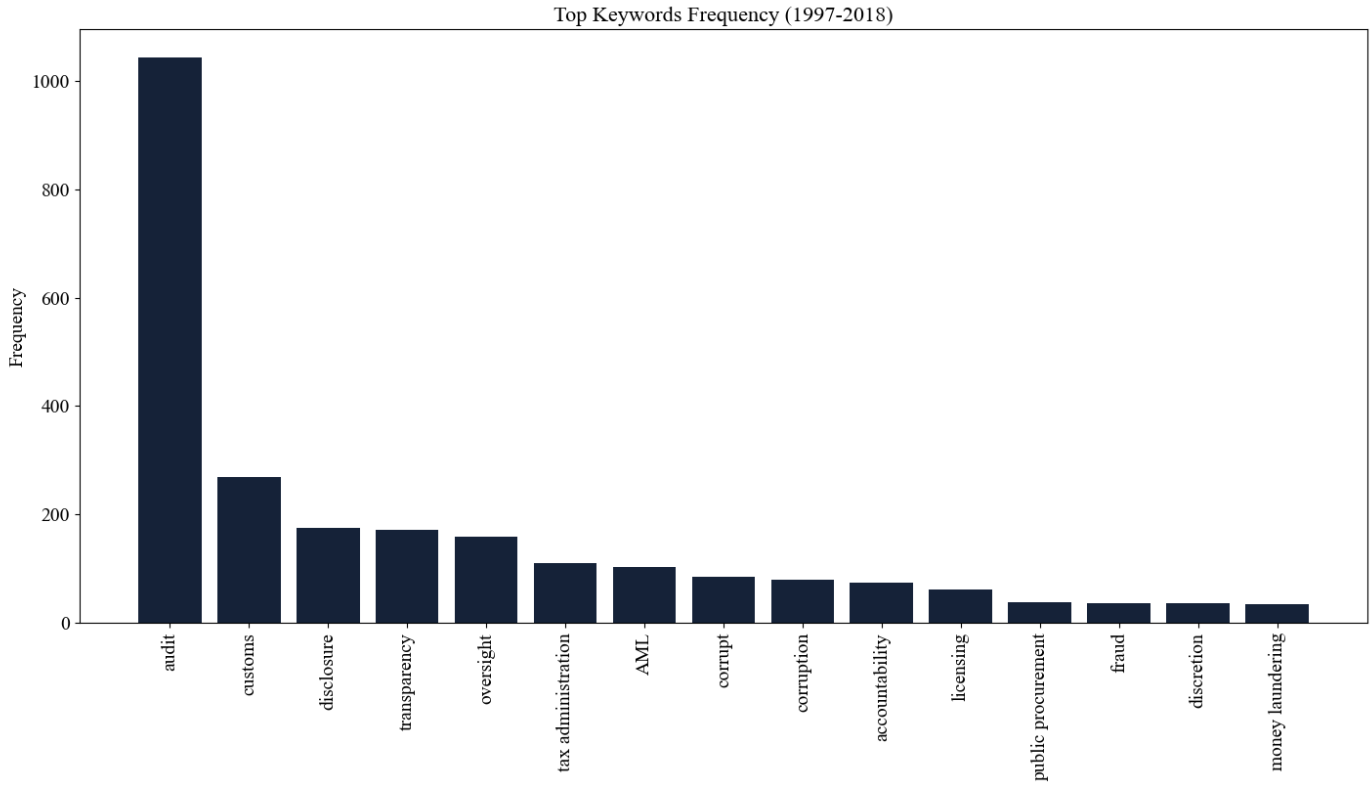
In response, Angin et al. (2024) developed a list of direct and indirect keywords associated with corruption, which can be applied to the dataset developed by Kentikelenis et al. (2016). This thesis adopts the methodology proposed by Angin et al. (2024) and utilises the raw dataset from Kentikelenis et al. (2016) to create a more comprehensive categorisation of anti-corruption conditions, overcoming the limitations of MONA's existing categorisation. This new categorisation forms the independent variable for this research.

To create new data for the anti-corruption conditionality, the raw descriptions of the conditions provided by Kentikelenis et al. (2016) were analysed. Given that anti-corruption conditions fall under structural conditionality, only conditions in the form of Prior Actions, Structural Performance Criteria, and Structural Benchmarks were included in the analysis (IMF, 1997). The descriptions were analysed using the direct and indirect keywords associated with corruption (Appendix A), as established by Angin et al. (2024). The keywords were identified through a qualitative review of key IMF documents related to corruption to understand the common language and phrases used by the institution. Their review focused on important texts, including the 1997 framework on corruption, its updated version from 2018, and detailed discussions in the IMF's fiscal monitor reports. Additionally, they examined specific country loan programs to ensure that the terminology identified in these foundational documents was consistently reflected in the program language. This allowed for the refinement of the keywords used in their analysis, ensuring a comprehensive and accurate identification of anti-corruption conditions.

During this period, the IMF employed both direct and indirect terms related to anti-corruption. Given the politically sensitive nature of the issue, the IMF often approached corruption indirectly, focusing on strengthening regulatory frameworks and promoting transparency, key strategies in combating corrupt practices (IMF, 2018; IMF, 2019). For instance, the IMF emphasised initiatives like 'e-government' and 'digitalisation' as mechanisms to enhance transparency and accountability within governmental operations (IMF, 2019; Angin et al., 2024). Additionally, Angin et al. (2024) highlight that in the 2010 IMF program for Greece, priorities such as 'tax compliance' and 'tax evasion' were emphasised to tackle the well-documented transparency challenges in the Greek public administration and curb corrupt practices. Despite these efforts, the term 'corruption' was rarely mentioned explicitly in the official memoranda.

To ensure a rigorous analysis in this thesis, a histogram was generated to display the frequency of the identified keywords, allowing for the detection of any unexpected outliers. As shown in Figure 1, the keyword 'audit' appears with significantly higher frequency comparing others. This result aligns with the theoretical framework, as audits represent one of the primary mechanisms through which the IMF seeks to address corruption (IMF, 1997; IMF, 2018).

Figure 1: Histogram distribution of keywords



Following the identification of keywords, Python was utilised to automate the quantification of keyword occurrences across all condition texts. Similar to the method used by Angin et al. (2024), a Python script was developed using the Natural Language Toolkit (NLTK) to perform standard text mining procedures. These procedures included converting text to lowercase, removing punctuation, dates, numbers, and stop words, and applying lemmatisation to reduce words to their root forms. After pre-processing the texts with NLTK, the script searched for the identified keywords within the condition texts and calculated the frequency of corruption-related terms by counting keyword occurrences. This process generated a quantitative measure of corruption-related keywords for each condition, with any condition containing at least one keyword classified as an anti-corruption condition (Angin et al. 2024)

A binary indicator was used to denote whether a country had an active program containing anti-corruption measures in a particular year, coded as '1' if one or more anti-corruption conditions were present and '0' otherwise (Stubbs et al. 2018; Kern et al. 2019; Reinsberg, Stubbs, Kentikelenis, & King, 2019; Bomprezzi & Marchesi, 2023). The relevant year corresponds to the year in which the conditions were scheduled for implementation (Kentikelenis et al. 2023). Details of the coding process are provided in Appendix B.

3.1.2. Dependent variable

The IMF's anti-corruption measures aim to assist member nations in addressing governance and corruption challenges within various institutions where high-ranking public officials operate (IMF, 1997). Given the institutional diversity across countries, this study utilises the political corruption index from the Varieties of Democracy (V-Dem) dataset as a measure of corruption, consistent with comparable research (Ataman, 2022; Uberti, 2022; Toft & De Soysa, 2021)

The V-Dem dataset compiles 470 indicators related to democratic governance, each constructed through structured evaluations by experts in the respective countries. The political corruption index aggregates data from four subsidiary measures: (i) the public sector corruption index, (ii) the executive corruption index, (iii) the legislative corruption index, and (iv) the judicial corruption index (Dalton & Esaray, 2023). Each of these four governmental spheres is weighted equally in the resultant index. The scale ranges from low to high corruption, measured on a spectrum from 0 to 1 (Coppedge et al. 2022). This index reflects the corruption levels at the end of each respective year, indicating no time lag between the year of data reporting and the year it describes in terms of corruption. According to Uberti (2022), this dataset provides reliable, expert-coded insights into the prevalence of corruption at the country-year level, representing the most comprehensive source of corruption data to date. It surpasses indicators such as TI's Corruption Perceptions Index and the International Country Risk Guide Index, addressing significant data limitations that hindered previous studies.

While this index is widely used to measure corruption within political institutions, it is important to acknowledge that it relies on expert assessments. These evaluations are informed by observable corrupt practices within each country but inevitably incorporate elements of perception, reflecting both actual incidents and the perceived prevalence of corruption (Coppedge et al. 2020).

To capture the lagged effects of IMF anti-corruption conditions on corruption, this study examines not only the immediate outcomes but also considers the impact on future corruption levels. Specifically, in line with comparable research, the effects of each IMF program are evaluated using one-year, two-year, and three-year future values (t+1, t+2, t+3) (Reinsberg, Kentikelenis, & Stubbs, 2019). This approach enables the observation of how IMF conditions influence corruption over time, capturing any delayed effects. Previous studies have demonstrated that the impact of conditionality typically stabilises after two years, validating the selected timeframe (Cole, 2015; Reinsberg, 2019; Kern et al. 2019). Furthermore, incorporating future values helps address the issue of simultaneity, which will be discussed later in this thesis (Stubbs et al. 2018).

3.1.3. Control variables

To accurately assess the impact of IMF anti-corruption measures, it is essential to control for other factors that may influence corruption levels. As emphasised in the theoretical framework, the effectiveness of anti-corruption initiatives is shaped by the broader economic and political contexts in which they are implemented, as well as the potential for rent-seeking behaviour (Mungiu-Pippidi, 2011; Gaspar & Hagan, 2016). Building on this, the study incorporates a comprehensive set of control variables that account for these contextual factors, thereby ensuring a more precise analysis of the effects of IMF conditionality. These control variables are supported by empirical research in similar studies (Mauro, 1995; Treisman, 2000; Montinola & Jackman, 2002; Cole, 2015; Brusca et al., 2018; Reinsberg, Kentikelenis, & Stubbs, 2019; Reinsberg, Stubbs, Kentikelenis, & King, 2019; Chong et al. 2020; Ataman, 2022). By controlling for these factors, the analysis aims to isolate the impact of IMF conditionality on corruption.

Political factors

To account for political factors, this model incorporates several key variables. First, a standard measure of democracy and autocracy from the Polity IV database is included, which ranges from -10 (most autocratic) to 10 (most democratic) (Chong et al. 2020). Democratic regimes tend to be more effective at curbing corruption than transitional or authoritarian regimes, largely due to the greater institutional transparency inherent in democratic systems. This enhances the capacity to expose corrupt practices and reduces incentives for engaging in corruption (Persson & Tabellini, 2004; Ataman, 2022). The Polity IV dataset assesses political regime characteristics such as the competitiveness of political participation, the openness and competitiveness of executive recruitment, and the constraints on executive authority. These dimensions are critical for understanding the institutional environment in which governance and corruption unfold. However, it is important to note that the Polity IV score does not include corruption as an indicator; rather, it focuses on the structural attributes of political regimes that may indirectly influence corruption levels (CSP, 2020).

Regime durability, also sourced from the Polity IV dataset, is another crucial variable considered in this model (Reinsberg, Stubbs, Kentikelenis, & King, 2019). It reflects the time the current political order has persisted without significant transformation, measured by the number of years since the last major change in a country's democracy or autocracy score. Here, a major change is defined as a shift of three points or more in the democracy score within a given year (CSP, 2020). Researchers suggest that lower regime durability is often associated with higher levels of corruption, as political instability fosters an environment where short-term corrupt behaviour becomes more prevalent (Montinola & Jackman, 2002; Khan & Farooq, 2019). However, the relationship between regime durability and corruption is not entirely straightforward. Campante et al. (2008) highlight the complexity of this dynamic, finding that corruption can also flourish in highly stable regimes. In such cases, the long-term confidence of political

rules and private sector actors in the regime's durability may incentivise prolonged and entrenched corrupt practices. Therefore, both extremes of regime stability, whether characterised by frequent political changes or long-standing rule, may contribute to heightened levels of corruption, emphasising the need to account for regime durability in corruption analyses.

Economic factors

To account for the economic effects of corruption, the analysis includes a control for economic development, commonly measured as the natural logarithm of gross domestic product (GDP) per capita (Mauro, 1995; Reinsberg, Kentikelenis, & Stubbs, 2019). Poorer economic conditions are often linked to higher levels of corruption, as underdeveloped economies typically suffer from weaker governance structures and limited resources to tackle corrupt practices effectively (Shabbir & Anwar, 2007). Conversely, some scholars suggest that developing countries experiencing economic growth tend to exhibit lower corruption, driven by the belief that strong governance facilitates such growth (Kurtz & Schrank, 2007). In either way, controlling for GDP per capita is crucial to isolate the specific impact of IMF anti-corruption measures on corruption. The natural logarithm normalises the data, reducing skewness and allowing for a more accurate comparison of economic wealth across countries. This adjustment ensures that the analysis reflects variations in economic conditions without being disproportionately influenced by extreme values (Cole, 2015).

Additionally, trade openness is incorporated as a control variable, measured as a percentage of GDP (Treisman, 2000). Existing research suggests that higher levels of trade openness are generally linked to lower levels of corruption, as open economies are more integrated into global markets. This integration subjects them to external pressures to conform to international standards, encouraging governments to adopt stronger governance practices and anti-corruption measures to remain competitive and attract foreign investment (Sandholtz & Gray, 2003; Majeed, 2014). Data on the GDP per capita and trade openness are sourced from the World Bank Development Indicators Databank, ensuring standardised and reliable measures for these key variables (World Bank, 2020).

Rent-seeking factors

To further capture factors that influence corruption, this analysis includes several variables aligned with the IMF's efforts to mitigate rent-seeking practices. Drawing on comparable studies, key factors are included (Reinsberg, Stubbs, Kentikelenis, & King, 2019; Ataman, 2022). First, the degree of urbanisation is measured as the percentage of the urban population relative to the total population. Urbanisation can affect corruption levels, as higher population densities in cities may increase opportunities for bribery and corrupt interactions between officials and citizens (Billger & Goel, 2009). Additionally, the analysis includes mineral rents and the natural logarithm of oil rents, both measured as percentages of GDP. These variables are particularly relevant because countries with high reliance on

natural resources are often more susceptible to corruption. The geographic concentration of resources and the associated wealth can weaken government accountability, exacerbating corruption in resource-rich nations (Pendergast, 2007; Shaxson, 2007). Again, all data for these variables are sourced from the World Bank Development Indicators Databank (World Bank, 2020).

Regional and time dummies

To conclude, similar models include year dummy variables to account for factors that may influence corruption uniformly across countries over time. For instance, global shocks like the 2007-2008 financial crisis can erode public confidence in institutions, with urgent bailouts and rapid policy responses that lack transparency can lead to higher corruption perceptions (Morales and Andreosso-O'Callaghan, 2012; Vukovik, 2021). In contrast, post-crisis periods often see countries implementing regulatory reforms enhancing oversight and transparency, which can reduce corruption perceptions by strengthening institutional integrity (Duffie, 2018). Similarly, regional dummy variables are incorporated to control for region-specific factors that remain constant but may impact corruption levels across different nations. For example, a regional dummy for SSA might control for persistent factors like political instability or weak institutional frameworks that tend to influence corruption levels similarly across countries in that region (Cole, 2015; Reinsberg, Stubbs, Kentikelenis, & King, 2019). Regional classifications in this study are derived from the V-Dem database, which defines regions as politico-geographic entities. These classifications consider not only geographical proximity but also shared socio-political characteristics, as identified by scholars in democratisation and governance studies (Teorell et al. 2016). Appendix C provides a detailed classification of the countries by region.

3.2. Endogeneity

The main challenge in evaluating the impact of anti-corruption measures on the level of corruption is endogeneity. In a linear regression model, endogeneity occurs when independent variables are correlated with the error term, leading to biased estimators (Wooldridge, 2012; Min, 2019). Specifically, according to Mishra et al. (2019), as many evaluation studies are based on cross-sectional data, it inherently has the potential for two forms of endogeneity: selection bias and simultaneity bias. These biases complicate accurate estimations of causal relationships between anti-corruption measures and corruption levels, potentially distorting the analysis. Therefore, addressing endogeneity is crucial to ensure the validity and reliability of the findings in such evaluations.

3.2.1. Selection bias

This study examines the impact of IMF anti-corruption conditions on a country's corruption levels. However, existing methods for estimating the average treatment effect of IMF program participation often face the challenge of selection bias (Steinwand & Stone (2008).

This endogeneity problem arises because countries participating in IMF programs systematically differ from those that do not, potentially affecting the outcomes of interest (Stubbs et al. 2018). Specifically, the primary methodological challenge here is that selection into IMF anti-corruption programs is non-random. Countries receiving IMF support through these programs typically face significant governance and corruption issues, directly influencing their corruption levels. Consequently, simple comparisons between countries with and without IMF programs would not yield causal effects but instead reflect a negative bias (Bomprezzi & Marchesi, 2023). While some influencing factors can be observed and controlled for, others, such as the political commitment to implementing reforms, are not directly observable (Vreeland, 2003). It is important to account for factors correlated with both IMF participation and the outcomes to avoid misattributing their effects on IMF participation (Stubbs et al. 2018).

To address this, scholars have employed various approaches, including matching methods, instrumental variables, system GMM estimation, and Heckman estimators. Among these, Stubbs et al. (2018) identify the instrumental variable approach and Heckman's variants as particularly effective in tackling selection bias. Like comparable research, this study adopts the instrumental variable approach because it not only effectively addresses selection bias, like Heckman's method, but also helps mitigate issues related to omitted variable bias, measurement errors, and simultaneity (Reinsberg, Kentikelenis, & Stubbs, 2019; Reinsberg, Stubbs, Kentikelenis, & King, 2019; Bomprezzi & Marchesi, 2023).

The instrumental variable approach leverages an instrumental variable which is partially correlated with IMF anti-corruption conditionality but influences corruption exclusively through this conditionality. Identifying such valid instruments presents a formidable challenge, as the instrument must satisfy both the exclusion and relevance criteria (Reinsberg, Stubbs, Kentikelenis, & King, 2019). Specifically, for an instrument to be considered valid, the instrumental variable (Z) must be correlated with the regressor (X) (relevance) while remaining uncorrelated with the disturbance term (U) (exclusion) (Wooldridge, 2012). Thus, the following two conditions must be met:

1 **Relevance:** $\mathbf{Cov(X,Z) \neq 0}$

2 **Exogeneity:** $\mathbf{Cov(U,Z) = 0}$

Despite this challenge, Stubbs et al. (2018) identified a suitable instrument for this instrumental variable approach. They introduce $IMFBUDG_{j,t,}$ a novel instrument for IMF conditionality, which is an interaction variable between the average number of conditions that a country j receives within an IMF program and the annual IMF budget constraint in year t.

In the analysis, the budget constraint is proxied by the natural logarithm of the IMF's liquidity ratio, calculated as the ratio of liquid resources to liquid liabilities (Lang, 2020; Nelson & Wallace, 2016). Liquid resources comprise the sum of usable currencies and Special Drawing Rights contributed, while liquid liabilities encompass the sum of members' reserve tranche positions and outstanding IMF borrowing from members (Lang, 2016). Data for liquid resources and liabilities were derived from the IMF's Annual Reports (1997-2018) and the IMF's International Financial Statistics. The instrumental variable equation is defined as follows:

$$IMFBUDG_{j,t} = (\text{average number of anti-corruption conditions})_j * \ln \left(\frac{liquid\ liabilities}{iquid\ resources}\right)_t$$

Here, the within-country average is the average number of conditions country j received per program between 1997 and 2018, while the IMF liquidity ratio is defined in year t.
This instrument has been selected due to its fulfilment of both the relevance and exogeneity criteria. To satisfy the relevance criterion, the instrument must correlate with the endogenous explanatory variable, IMF's anti-corruption conditionality. The interaction between the average number of anti-corruption conditions within an IMF program and the IMF's budget constraint is a robust predictor of whether a country is subjected to IMF anti-corruption conditions (Kentikelenis et al. 2016). This instrument meets the relevance criterion, as in periods when the IMF assists a greater number of countries, resource scarcity forces the organisation to impose more conditions on each country as a precautionary measure (Lang, 2016).

Regarding the exogeneity criterion, the instrument must not influence the outcome variable (corruption levels) except through its effect on the endogenous explanatory variable (IMF anti-corruption conditionality). The average number of conditions and the IMF's budget constraint are posited to affect the probability and nature of IMF conditionality without directly impacting corruption levels. This instrument likely meets the exogeneity criterion because variations in the number of conditions from a country's long-term average are driven by the IMF's global budget constraints rather than by the specific institutional characteristics of the country. Consequently, the instrument affects corruption levels solely by impacting IMF anti-corruption conditionality (Chapman et al. 2015; Reinsberg, Kentikelenis, & Stubbs, 2019).

3.2.2. Simultaneity bias

In addition to selection bias, simultaneity can introduce endogeneity into this analysis. This issue arises because IMF-imposed anti-corruption conditions can influence the level of corruption while, at the same time, the level of corruption can affect the implementation of these conditions. For instance, high corruption levels in a country may lead the IMF to impose stricter anti-corruption measures, while the enforcement of these measures could, in turn, reduce corruption over time. This bidirectional relationship can bias the coefficient of the independent variable, potentially leading to misleading conclusions that higher corruption levels drive more stringent IMF anti-corruption measures.

Therefore, addressing simultaneity is critical. The included future values of corruption help mitigate this problem by offering a control mechanism that accounts for the expected impact of current IMF anti-corruption measures on future corruption levels (Min, 2019). However, as previously discussed, using an instrumental variable already effectively tackles this bias by isolating the causal impact of IMF conditions on corruption, ensuring a more accurate and unbiased estimation of the relationship.

3.3. Data preparation

Data for all variables were collected and analysed using SPSS Statistics version 29. First, the independent variable was coded as a binary indicator. Second, data for the instrumental variable were sourced, calculated, and integrated accordingly. Third, data for the dependent and control variables were downloaded from relevant databases. To ensure consistency, country names across the datasets were standardised. After standardisation, the datasets were merged by country and year by using Python, with each observation representing the relevant scores for each country. Finally, dummy variables were created to control for regional and year-fixed effects.

3.4. Reliability and validity

The research design has been carefully structured to enhance reliability and validity, which are critical for ensuring robust and credible results. Reliability is supported through the consistent application of standardised research methods, ensuring the dependability of the study's findings (Mellinger & Hansen, 2020). By utilising publicly available data from reputable sources, the research allows for replication. This transparency enhances reliability, as the detailed documentation of procedures enables other researchers to reproduce the results under similar conditions. Additionally, the study demonstrates strong external validity due to its large sample size and broad temporal and geographical scope, which covers data from 119 developing countries over two decades. This breadth increases the generalizability of the findings across a range of contexts. Internal validity is enhanced by the meticulous coding of variables, which ensures that key factors related to IMF conditionality and corruption are systematically captured and analysed. This careful coding process helps to reflect the true relationship between the

variables. However, potential challenges remain, particularly in terms of the subjective nature of some of the data for corruption, which could affect the accuracy of the findings.

3.5. Data analysis

When employing an instrumental variable approach, a 2SLS method is applied to address endogeneity in the analysis. The 2SLS method consists of two stages of regression designed to isolate the variation in the endogenous explanatory variable that is uncorrelated with the error term, ensuring unbiased and consistent estimates (Bomprezzi & Marchesi, 2023). In the first stage, the endogenous regressor X is regressed on the instrumental variable Z. In the second stage, the dependent variable Y is regressed on the predicted values of X obtained from the first stage regression (Wooldridge, 2010). The 2SLS procedure is outlined as follows:

1st stage:

$$IMF\_Conditionality_{j,t} = \alpha0 + \alpha1*IMFBUDG_{j,t} + \alpha2*ControlVariables_{j,t} + \alpha3*\sigma_t + \alpha4*\gamma_j + \upsilon_{j,t.}$$

2nd stage:

$$Corruption_{j,t} = \beta0 + \beta1*predIMF\_Conditionality_{j,t} + \beta2*ControlVariables_{j,t} + \beta3*\sigma_t + \beta4*\gamma_j + \epsilon_{j,t}$$

Where:

- $IMF\_Conditionality_{j,t}$ is the binary indicator for whether the IMF program contains anti-corruption measures (1 if it does, 0 if it does not)
- $Corruption_{j,t}$ is the corruption score for country j in year t
- $IMFBUDG_{j,t}$ is the instrument for country j in year t.
- $predIMF\_Conditionality_{j,t}$ is the predicted value for $IMF\_Conditionality_{j,t}$ from the first stage
- *ControlVariables* are GDP per capita, trade openness, democracy score, regime durability, urbanisation, mineral rents and oil rents for country j in year t
- σ_t represents the time dummies for year t
- γ_j represents the regional dummies for country j
- $\upsilon_{j,t.}$ is the error term in the first stage regression
- $\epsilon_{j,t}$ is the error term in the second stage regression

4. Empirical results

4.1. Descriptive statistics

Before initiating the primary data analysis, the descriptive statistics for all variables were computed. These statistics offer a concise summary of the fundamental characteristics of the dataset, enabling a better understanding of the data (Field, 2017).

4.1.1. Summary statistics

The descriptive statistics summarised in Table 1 provide insights into the key variables used in this study, including the mean values, standard deviations, and minimum and maximum values for each variable. The dataset used in this analysis consists of 23547 observations representing IMF conditionality instances across multiple countries and years. However, due to missing data, the number of valid observations varies across certain variables. For example, while variables such as *IMF_conditionality*, *Corruption*, and *IMFBUDG* contain the full 23547 observations, others like *Democracy_score* (N = 21886), *GDP_per_capita_log* (N = 22291), and *Trade_openness* (N = 21574) have fewer observations. After accounting for missing data, the final valid sample size used for analysis is 19201 observations.

Furthermore, descriptive statistics help identify potential data issues, such as skewness or outliers, which could impact the regression results. Understanding these patterns is crucial for verifying the assumptions of the 2SLS regression, ultimately leading to a more accurate interpretation of the relationship between IMF conditionality and corruption. For instance, variables like *Mineral_rents* display distributions that may appear inconsistent with the assumptions required for 2SLS regression analysis. These assumptions will be evaluated in section 4.2 before proceeding with the regression analysis to ensure the robustness and validity of the results.

Table 1: Descriptive statistics

	Obs.	Minimum	Maximum	Mean	Std. Deviation
IMF_conditionality	23547	0	1	0.09	0.289
Corruption	23547	0.013	0.965	0.660	0.224
IMFBUDG	23547	0.000	115.171	35.634	18.753
Democracy_score	21886	-7	10	3.82	5.027
Regime_durability	22625	0	92	10.66	11.348
GDP_per_capita_log	22291	5.507	10.893	7.437	1.028
Trade_openness	21574	16	222	72.08	33.483
Urbanization	23453	8.682	93.779	46.896	19.397
Mineral_rents	23515	0.000	24.834	0.933	2.396
Oil_rents_log	23437	0.000	65.158	2.387	7.484

4.1.2. Descriptives key variables

After examining the basic descriptive statistics, the evolution of the key variables in this study, corruption and IMF conditionality, are analysed to assess whether the trends observed align with existing theoretical expectations.

Dependent variable

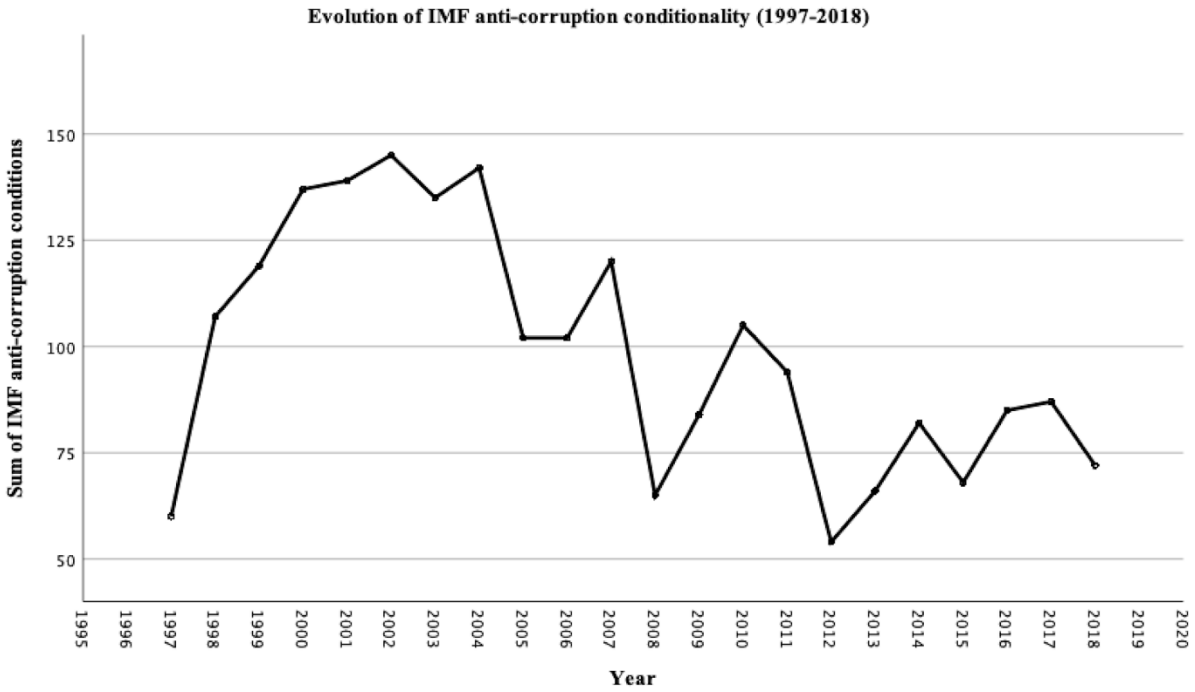
Figure 2 illustrates the development of corruption from 1997 to 2018. The graph shows a large fluctuation in the perception of corruption during and after the global financial crisis of 2007-2008, underscoring the need for including year dummies in the analysis, as they control for global events and time-specific shocks. Accounting for these year-specific variations ensures that changes in corruption are not mistakenly attributed to IMF conditionality when they may be driven by broader temporal factors. Despite some improvement over time, only a slight downward trend suggests that corruption remains persistently high, consistent with findings on its enduring nature in developing countries (Olken & Pande, 2012).

Figure 2: Graph corruption scores

Independent variable

Figure 3 shows the evolution of IMF anti-corruption conditions from 1997 to 2018. A notable increase in the number of conditions is visible starting in 1997, which aligns with the IMF's shift towards a stronger focus on anti-corruption policies, as outlined in its formal governance framework (IMF, 1997). However, by 2018, the number of anti-corruption conditions had nearly returned to the levels observed in 1997. This trend corroborates the IMF's acknowledgement that there may have been a diminished emphasis on anti-corruption measures in the years following their initial introduction, prompting the need for reinforced guidance in 2018 (IMF, 2018). Furthermore, the IMF's focus on anti-corruption conditionality also exhibited variability during and after the global financial crisis. This is consistent with research that stated global events shift the attention away from anti-corruption efforts (Morales and Andreosso-O'Callaghan, 2012). Besides, the peak in 2010 is in line with the research of Kentikelenis et al. (2016), stating that directly after the crisis, there was an increased focus on conditions leading to institutional reforms. Overall, the data trend aligns with theoretical expectations, supporting the validity of the variable in the regression analysis.

Figure 3: Graph IMF anti-corruption conditionality



Furthermore, as the independent variable is relatively new, Appendix D provides additional details about its distribution across countries. The frequency distribution of the independent variable across 161 countries shows notable variation in the number of observations per country. Romania (580), Ukraine (555), and Pakistan (554) have the highest number of instances where IMF anti-corruption conditionality was present, representing 2.5%, 2.4%, and 2.4% of the total observations, respectively. These are followed by the Kyrgyz Republic (490), Armenia (466), and Bosnia and Herzegovina (463), which account for 2.1%, 2.0%, and 2.0% of the total observations. Notably, several of these countries, such as Ukraine and Armenia, belong to the Baltic and CIS regions, which aligns with the IMF's strategic focus on addressing corruption in post-Soviet governance systems characterised by deep-rooted corruption and a lack of transparency (Wolf & Gürgen, 2000).bIn contrast, the data reveals that SSA countries exhibit relatively fewer instances of IMF anti-corruption conditionality. For example, Chad (248), Niger (382), and Angola (75) account for only 1.1%, 1.6%, and 0.3% of the total observations, respectively. This is particularly noteworthy, given the IMF's stated commitment to intensifying anti-corruption efforts in these regions (Scott, 2011).

4.2. Assumptions

4.2.1. Assumptions of the instrumental variable

When conducting a regression analysis, it is crucial to adhere to the model's underlying assumptions. Given that this study employs an instrumental variable approach, it is essential to verify the validity of

the instrument. The relevance criteria of the instrument will be evaluated by examining the results of the first-stage regression. The exogeneity of the instrument can only be assessed if multiple instruments are available, which is not the case in this study (Gujarati, 2011; Stock & Watson, 2020).

Relevance

To ensure the relevance of the instrumental variable, a first-stage regression was performed where the endogenous variable (IMF anti-corruption conditionality) was regressed on the instrumental variable (IMFBUDG) along with control variables, year dummies, and regional dummies. Here, the F-value from the first stage is 13.817. Staiger and Stock (1997) demonstrate that an F statistic above 10 in the first stage of instrumental variables regression indicates strong instruments, ensuring reliable and unbiased estimates. Besides, it shows the instrument has a significant t-value ($t = 12.825$, $p < 0.001$), indicating that it is a strong predictor of the endogenous variable.

Table 2: first-stage regression summary statistics

Variable	F-statistic	T-value	Sig.
IMFBUDG	13.817	12.825	<0.001

Exogeneity

As the disturbance term is unobservable, the exclusion condition cannot be tested (Stock & Watson, 2020). Nonetheless, it can be argued that the instrument only affects corruption through IMF conditionality and not through other factors. The reasoning behind this is that the instrument captures the interplay between a country's anti-corruption conditions and its reliance on IMF liquidity, which directly influences the conditions set by the IMF. These conditions, in turn, affect corruption levels. Therefore, it is assumed that the instrument does not affect corruption by any other means outside of IMF conditionality.

4.2.2. Assumptions of the 2SLS regression

Next, the assumptions of the 2SLS model were examined. The first assumption, that the expected value of all disturbance terms is zero, was confirmed. Additionally, normality, linearity, and homoscedasticity were assessed. Upon checking for outliers, several significant outliers were identified, as anticipated from the descriptive statistics in Table 1. Outliers in the variables *Regime_durability*, *Mineral_rents*, and *Oil_rents_log* were excluded from the dataset to maintain the validity of the analysis (Stock & Watson, 2012). Furthermore, the variance inflation factor (VIF) was used to test for multicollinearity among the predictor variables. The VIF values for all variables are less than 5, indicating that multicollinearity is not a concern in this analysis (Tolerance > .01, VIF < 5) (Daoud, 2017). The values

are shown in Appendix E. This confirms that the assumption of no harmful multicollinearity has been satisfied for all predictor variables.

4.3. 2SLS regression

After verifying the model assumptions, the 2SLS analysis was conducted. The output is presented in Table 4. The results of this analysis are presented in Table 4.

Table 4: 2SLS output

	t-0	t-1	t-2	t-3
Corruption				
(Constant)	1.429***	1.459***	1.472***	1.506***
	(0.048)	(0.047)	(0.046)	(0.045)
IMF_conditionality	1.157***	1.115***	1.080***	1.057***
	(0.104)	(0.101)	(0.099)	(0.097)
Democracy_score	-0.012***	-0.011***	-0.011***	-0.010***
	(0.001)	(0.001)	(0.001)	(0.001)
Regime_durability	-0.002***	-0.002***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)
GDP_per_capita_log	-0.126***	-0.132***	-0.134***	-0.142***
	(0.007)	(0.007)	(0.007)	(0.006)
Trade_openness	0.000**	0.000**	0.000**	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Urbanization	0.002***	0.002***	0.002***	0.002***
	(0.002)	(0.000)	(0.000)	(0.000)
Mineral_rents	-0.004**	-0.003**	-0.003**	-0.002
	(0.001)	(0.001)	(0.001)	(0.001)
Oil_rents_log	0.006***	0.006***	0.007***	0.007***
	(0.001)	(0.001)	(0.001)	(0.001)
R Square	0.152	0.161	0.170	0.177
Adjusted R Square	0.151	1.161	0.168	0.176
Observations	19038	19038	19038	19038
Year dummies	Yes	Yes	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes

Significance levels: * .1 ** .05 *** .01.

Each column in Table 4 represents a different time lag for the variables of interest, allowing for an assessment of how IMF anti-corruption conditionalities influence corruption levels over varying periods. Specifically, the columns illustrate the effects of these measures on corruption at the time of implementation (t-0), as well as one (t+1), two (t+2), and three years (t+3) after their introduction. This approach provides insight into both the immediate and delayed impacts of anti-corruption conditions on corruption levels.

The coefficient for the independent variable, IMF conditionality, in the first regression is equal to 1.157 ($p<0.001$), indicating a positive and significant relationship between IMF conditionality and corruption scores. Specifically, a one-unit increase in IMF conditionality is associated with a 1.157 increase in the corruption score as measured by V-Dem. In the second regression, this coefficient decreases slightly to 1.115 ($p<0.001$), suggesting that the correlation between the variables weakens after one year. By the second and third years, the coefficients show a further modest decline, with values of 1.080 ($p<0.001$) and 1.057 ($p<0.001$), respectively. This pattern aligns with previous research, which indicates that the effects of conditionality tend to stabilise after two years (Cole, 2015; Reinsberg, Stubbs, Kentikelenis, & King, 2019; Kern et al. 2019).

As highlighted in the previous chapter, the V-Dem index is a subjective indicator of corruption, partially reflecting perceptions. Thus, the positive coefficients suggest that corruption is perceived as higher when IMF anti-corruption conditions are implemented. Therefore, interpreting these results requires careful consideration, which will be further explored in the next chapter.

The results reveal key relationships between various factors and corruption, supported by beta values and significance levels. A higher democracy score (β =-0.012, $p<0.001$) is associated with lower corruption, aligning with the theory that democratic regimes have stronger institutions for transparency and accountability (Reinsberg, Kentikelenis, & Stubbs, 2019). Similarly, regime durability (β=-0.002, $p<0.001$) suggests that political stability leads to less corruption, which supports the idea that stable environments foster good governance (Montinola & Jackman, 2002).

GDP per capita (β=-0.126, $p<0.001$) also shows a negative relationship with corruption, consistent with the theory that wealthier nations can better combat corruption due to superior resources and infrastructure (Shabbir & Anwar, 2007). However, trade openness (β=0.000, $p<0.05$) shows a slight positive relationship with corruption, which deviates from most research (Sandholtz & Gray, 2003).

Urbanisation (β =0.002, $p< 0.001$) also shows a positive correlation with corruption, supporting the argument that densely populated urban areas create more chances for corrupt exchanges between private and public sectors (Billger & Goel, 2009). Interestingly, mineral rents (β=-0.004, $p<0.05$) show a

negative relationship with corruption, which contradicts traditional views that resource-rich countries are more prone to corruption (Pendergast, 2007). However, recent comparable studies using this as a control variable also show a positive value, suggesting the relationship is more nuanced (Reinsberg, Stubbs, Kentikelenis, & King, 2019; Ataman, 2022). In contrast, oil rents (β=0.007, $p<0.001$) are positively associated with corruption, in line with the theory that concentrated wealth from oil fosters rent-seeking and governance failures (Shaxson, 2007).

To conclude, the R-squared values, which indicate the proportion of variance in the dependent variable explained by the independent variables, reflect the model's predictive power (Prairie, 1996). In the first regression, the R-squared is 0.152, meaning the explanatory variables account for 15.2% of the variance in corruption. The R-squared values for the second, third, and fourth regressions are 16.1%, 17%, and 17.1%, respectively. While these values might seem modest, it is common in social sciences to have lower R-squared values compared to fields like natural sciences or engineering. This is due to human behaviour's complexity and unpredictability, making it harder to capture all influencing factors in a model (Ozili, 2023).

5. Discussion

Having presented the results, connecting these statistical findings with the literature and studies discussed in the theoretical framework is essential. This comparison will allow for a thorough evaluation of whether the initial research expectations have been confirmed or contradicted.

The main objective of this study was to examine the effectiveness of IMF anti-corruption conditions in developing countries. This research aimed to enhance the theoretical and practical understanding of anti-corruption efforts in the developing world. The results showed a positive, significant relationship between IMF anti-corruption conditions and corruption at the end of the implementation year. This suggests that when IMF anti-corruption conditions are applied, the corruption score at the end of that year is higher, as measured by the V-DEM index. The coefficient stays positive but weakens one year later and continuously decreases, albeit progressively slower, over the subsequent two years.

This research used the V-Dem Political Corruption Index to measure corruption. This index is widely used in corruption research, serving as a key indicator of corruption levels within political institutions (Ataman, 2022; Uberti, 2022; Toft & De Soysa, 2021). As mentioned in previous chapters, it is important to acknowledge that the V-Dem index, like many other corruption measures, is derived from expert assessments, inherently including subjective evaluations. This reliance on expert judgment means that the index reflects the perceived prevalence of corruption within a country (Coppedge et al. 2020). While using more direct measures is not feasible in this study due to the large sample size and lack of consistent data, it is important to acknowledge that reliance on expert-based indices has its limitations and may affect the interpretation of findings of this study, as the higher corruption scores reflect the corruption perception rather than a genuine rise in corruption (Olken & Pande, 2012). Therefore, while it could seem that the results contradict hypothesis 1: '*IMF anti-corruption conditions are negatively related to corruption in developing countries'*, a closer examination reveals a more nuanced reality.

According to the principal-agent theory, increasing transparency and accountability is expected to reduce corruption by addressing information asymmetry between political agents and the public (Klitgaard, 1988; Shleifer & Vishny, 1993; Rose-Ackerman, 1999; ~~Lyrio et al. 2018~~). In this study, the observed increase in perceived corruption does not necessarily contradict this theory. Similar patterns have been identified in previous research, where transparency and accountability measures initially lead to a rise in corruption perception as they expose previously hidden corrupt activities.

Brusca et al. (2018) and Cole (2015) argue that while transparency and accountability measures aim to reduce corruption, they can also bring to light corrupt behaviours that were previously concealed, resulting in higher scores on perception-based indices like V-DEM. This interpretation could explain the

peak in corruption scores observed in the data, suggesting that IMF anti-corruption conditions may have made corruption more visible without necessarily increasing its actual prevalence.

According to Kaufmann and Bellver (2005) and Everett et al. (2007), the initial spike in perceived corruption observed in this study may represent a first step toward reducing corruption. They argue that when corruption becomes more visible, it creates more opportunities for civil society and the public to scrutinise government actions, increasing the likelihood that corrupt behaviour will be detected and punished, thereby reducing information asymmetry. This could, in turn, lead to lower levels of corruption. However, while a gradual reduction in corruption scores was observed in subsequent years, the positive correlation remains, indicating that this research has not proven that increased transparency and accountability lead to a decrease in corruption.

Critics of the principal-agent theory, on the other hand, argue that international institutions, including the IMF, often rely on this framework when addressing corruption without adequately considering local contexts. They suggest that this over-reliance on the principal-agent model frequently leads to a 'one-size-fits-all' approach, which fails to account for the unique political, social, and economic conditions of individual countries (Gephart, 2009; Persson et al. 2010). However, other researchers argue that the IMF does consider local contexts when implementing anti-corruption strategies (Bird & Willett, 2004; Joyce, 2003). If the critics' concerns were valid, these anti-corruption measures would be expected to be ineffective and have no direct impact instead of showing a peak followed by a gradual reduction in the perception of corruption. This could suggest that despite the criticisms, the IMF's application of the principal-agent approach may still play a role in increasing the visibility of corrupt activities.

The results are in contrast with Chen and Neshkova (2019), who argue that increased transparency does not increase the perception of corruption. While their research addressed the effects in a certain project's early and later stages, it does not consider the differences between short- and long-term effects. The gradual decline over time could suggest that as countries adjust to the transparency and accountability measures, the initial spike in perceived corruption subsides. However, this interpretation remains speculative, as the evidence from this study does not definitively confirm such a long-term effect.

While this study provides evidence that transparency and accountability measures may lead to an initial increase in perceived corruption due to greater visibility, it is important to consider the limitations of the methodological approach used. In line with comparable studies (Stubbs et al. 2018; Kern et al. 2019; Reinsberg, Stubbs, Kentikelenis, & King, 2019; Bomprezzi & Marchesi, 2023), a binary indicator was used to capture whether a program included anti-corruption measures. A value of '1' was assigned if at least one anti-corruption condition was present and '0' if no such conditions were in place. However, this binary approach does not account for the number or intensity of these conditions, which are crucial

factors in understanding their true impact on corruption. By treating the independent variable as a simple binary measure, this method likely underestimates the stringency of programs with multiple anti-corruption conditions that could exert more pressure and have a greater impact compared to those with only a single condition. As a result, the findings should be interpreted as reflecting the baseline effect of anti-corruption measures, and the potential for stronger impacts from more intensive programs may be understated.

6. Conclusion

Understanding the impact of IMF anti-corruption conditionality on corruption in developing countries is critical for assessing its effectiveness. Moreover, this is fundamental for evaluating the broader role of international organisations in addressing corruption. This thesis contributed to the academic discourse by providing evidence on the effects of IMF anti-corruption conditionalities in developing countries, an underexplored area in previous research. This study aimed to answer the research question: *'What is the effect of the IMF's anti-corruption conditions in developing countries, and what does this reveal about the role of international institutions in combating corruption?'*

This study investigated the relationship between IMF anti-corruption conditions and corruption levels, revealing a more nuanced impact than initially expected. In the short-term, the implementation of IMF anti-corruption conditions appears to lead to a marked increase in perceived corruption levels. This increase is likely driven by the enhanced transparency and accountability measures that accompany these conditions, as new standards expose corruption previously concealed or normalised within existing governance frameworks. Over time, however, these reforms may contribute to more sustainable improvements in both the reality and perception of corruption, aligning with the broader goals of principal-agent theory. However, future research is required to determine the real long-term effects of these anti-corruption measures.

The findings suggest that while international institutions like the IMF can play a significant role in initiating transparency and accountability reforms, their impact on reducing corruption is complex. The results indicate that the effectiveness of international institutions in combating corruption may not only lie in their ability to impose anti-corruption measures but also in their capacity to influence local governance structures to adopt more transparent practices, helping bring corrupt practices to light. Over time, these actions could potentially contribute to strengthening institutional resilience and reducing opportunities for corrupt behaviour.

6.1. Limitations

While this study provides valuable insights into the relationship between IMF anti-corruption conditionality and corruption in developing countries, several limitations must be acknowledged.

First, the challenge of overlapping IMF programs complicates the ability to attribute changes in corruption levels to specific anti-corruption conditions. Multiple programs running simultaneously can influence corruption in ways difficult to disentangle, introducing a risk of misattributing outcomes to interventions.

Second, while this study employs regional dummies to control regional political and economic factors, it does not distinguish the specific impact of IMF anti-corruption measures across different regions. Corruption levels and the effectiveness of these measures can still vary significantly by region, which is not fully captured in this research.

Third, the study did not distinguish between binding and non-binding IMF conditions. Both were treated homogenously in the analysis, even though binding conditions are mandatory and likely to have more immediate and direct implications for the borrowing countries. Non-binding conditions, which are more advisory, may not be enforced as rigorously, potentially diluting their impact. This lack of distinction could obscure the potentially stronger effects of binding conditions, limiting the depth of the analysis of how different types of conditions influence corruption.

Fourth, while the keyword-based approach to identifying anti-corruption conditions is innovative, it has limitations. The selection of keywords remains subjective, which could affect the accuracy of classifying conditions. This approach may not always fully capture the nuances of anti-corruption measures, potentially leading to misclassification or incomplete identification of relevant conditions.

6.2. Future research

Building on the limitations identified, suggestions for future research were offered.

First, future research should conduct regional analyses to explore how the effectiveness of IMF anti-corruption measures differs between regions. As highlighted in chapter 4, despite the IMF's stated focus on intensifying anti-corruption efforts in the SSA, the data suggests otherwise. This discrepancy reveals a gap that warrants further investigation into the specific challenges faced in this region. By distinguishing the impact of these measures across different regions, researchers could identify patterns or conditions that make anti-corruption initiatives more or less effective in specific contexts, resulting in more tailored insights and policy recommendations.

Second, future research could benefit from a more detailed examination of binding versus non-binding conditions. By distinguishing between these two types of conditionality, researchers can better assess how mandatory and advisory conditions impact corruption differently. Exploring the differential impacts of binding conditions, which are legally enforceable, versus non-binding ones, which may carry less weight, could yield deeper insights into the overall efficacy of IMF anti-corruption efforts.

Third, future studies should move beyond a binary indicator for anti-corruption conditionality and explore the intensity and scope of these measures. Researchers could develop a more nuanced coding

system that captures the number, strength, and specific content of the anti-corruption conditions in each program. This would allow for a more precise analysis of how the depth and breadth of IMF reforms influence corruption outcomes, offering a richer understanding of the relationship between program intensity and success in reducing corruption.

7. Recommendations

Based on the findings of this study, the following recommendations for academia and policymakers are made.

First, the results highlight the role that transparency and accountability can play in exposing corruption and potentially reducing it over time (Shleifer & Vishny, 1993). Building on this, a key recommendation for policymakers is to strengthen these mechanisms within government institutions. This can be achieved by mandating that key institutions, such as ministries, regulatory agencies, and public enterprises, regularly publish detailed and accessible reports on their activities, including public spending, procurement contracts, and financial audits. Enhancing data accessibility will improve transparency and enable public oversight. Furthermore, to ensure robust accountability, independent anti-corruption agencies, audit institutions, and judicial bodies should be empowered and protected from political interference. To maximise the effectiveness of these reforms, continuous evaluation and adaptation should be prioritised to ensure that transparency and accountability measures remain responsive to evolving governance challenges. Ultimately, this could reduce information asymmetry between the government and the public by ensuring that vital information is accessible, clear, and actionable, leading to a decrease in corruption.

Second, the study reveals the complexity behind measuring the effects of anti-corruption efforts. Policymakers could therefore implement strong monitoring and evaluation systems to assess the real impact of these reforms. Governments and international organisations could establish independent evaluation commissions tasked with systematically measuring and reporting the outcomes of anti-corruption initiatives. These commissions should operate separately from reform implementers, providing regular performance assessments to ensure reforms meet their goals. In practice, these commissions could collaborate with independent auditors, civil society organisations, and international partners to collect data on public procurement processes, financial reporting, and policy enforcement. Moreover, these commissions should have the authority to recommend corrective actions and policy adjustments where needed, ensuring anti-corruption measures remain adaptable and responsive.

Third, academia should prioritise longitudinal research to thoroughly examine the long-term effects of transparency and accountability reforms on corruption, particularly in the context of IMF interventions. While these reforms may initially lead to a spike in perceived corruption as hidden practices are exposed, it remains uncertain whether they result in enduring reductions in corrupt behaviour. To better understand these long-term impacts, scholars could employ case studies and comparative analyses that track the evolution of governance and corruption in countries subject to IMF anti-corruption conditions

versus those without such measures. This focus on long-term research would generate valuable knowledge about the durability of anti-corruption efforts and guide the development of more effective, evidence-based strategies tailored to different political and economic contexts.

8. References

Angin, M., Kaya, A., & Metinsoy, S. (2024). Who Receives IMF Anti-Corruption Measures? A Text Analysis of IMF Loan Programs. *Political Economy of International Organization*.

Arpac, O., Bird, G., & Mandilaras, A. (2008). Stop Interrupting: An empirical analysis of the implementation of IMF programs. *World Development*, *36*(9), 1493–1513. https://doi.org/10.1016/j.worlddev.2007.09.001

Ataman, Y. (2022). Evaluating IMF Structural Conditionality and Good Governance: Has Streamlining Worked to Reduce Corruption? *BOISE STATE UNIVERSITY GRADUATE COLLEGE*.

Azcárraga, A. A. P., Matsudaira, T., Montagnat-Rentier, G., Nagy, J., & Clark, R. J. (2022). Customs matters. In *International Monetary Fund eBooks*. IMF. https://doi.org/10.5089/9798400200120.071

Babb, S., & Kentikelenis, A. (2018). International financial institutions as agents of neoliberalism. In *SAGE Publications Ltd eBooks* (pp. 16–27). https://doi.org/10.4135/9781526416001.n3

Bakre, O. M. (2007). The unethical practices of accountants and auditors and the compromising stance of professional bodies in the corporate world: Evidence from corporate Nigeria. *Accounting Forum*, *31*(3), 277–303. https://doi.org/10.1016/j.accfor.2007.06.001

Barro, R. J., & Lee, J. (2005). IMF programs: Who is chosen and what are the effects? *Journal of Monetary Economics*, *52*(7), 1245–1269. https://doi.org/10.1016/j.jmoneco.2005.04.003

Berkman, S., Boswell, N. Z., Brüner, F. H., Gough, M., McCormick, J. T., Pedersen, P. E., Ugaz, J., & Zimmermann, S. (2008). The fight against corruption: international organizations at a cross-roads. *Journal of Financial Crime*, *15*(2), 124–154. https://doi.org/10.1108/13590790810866863

Billger, S. M., & Goel, R. K. (2009). Do existing corruption levels matter in controlling corruption? *Journal of Development Economics*, *90*(2), 299–305. https://doi.org/10.1016/j.jdeveco.2008.07.006

Bird, G. (2011). Mark S. Copelovitch. 2010. The International Monetary Fund in the global economy: Banks, bonds and bailouts (Cambridge, UK: Cambridge University Press). □*the* □*Review of International Organizations*, *6*(2), 215–218. https://doi.org/10.1007/s11558-011-9112-y

Bird, G., & Willett, T. D. (2004). IMF conditionality, implementation and the new political economy of ownership. *Comparative Economic Studies*, *46*(3), 423–450. https://doi.org/10.1057/palgrave.ces.8100060

Bird, S., Klein, E., & Loper, E. (2009). *Natural Language Processing with Python*.

Blackburn, K. (2012). CORRUPTION AND DEVELOPMENT: EXPLAINING THE EVIDENCE*. *Manchester School*, *80*(4), 401–428. https://doi.org/10.1111/j.1467-9957.2012.02314.x

Bomprezzi, P., & Marchesi, S. (2023). A firm level approach on the effects of IMF programs. *Journal of International Money and Finance*, *132*, 102819. https://doi.org/10.1016/j.jimonfin.2023.102819

Brown, C. (2009). Democracy's friend or foe? The effects of recent IMF conditional lending in Latin America. *International Political Science Review*, *30*(4), 431–457. https://doi.org/10.1177/0192512109342522

Brusca, I., Rossi, F. M., & Aversano, N. (2018). Accountability and Transparency to Fight against Corruption: An International Comparative Analysis. *Journal of Comparative Policy Analysis*, *20*(5), 486–504. https://doi.org/10.1080/13876988.2017.1393951

Campante, F. R., Chor, D., & Do, Q. (2008). INSTABILITY AND THE INCENTIVES FOR CORRUPTION. *Economics and Politics*, *21*(1), 42–92. https://doi.org/10.1111/j.1468-0343.2008.00335.x

Castro, C., & Nunes, P. (2013). Does corruption inhibit foreign direct investment? *Política Revista De Ciencia Política*, *51*(1). https://doi.org/10.5354/0716-1077.2013.27418

Chapman, T., Fang, S., Li, X., & Stone, R. W. (2015). Mixed signals: IMF lending and capital markets. *British Journal of Political Science*, *47*(2), 329–349. https://doi.org/10.1017/s0007123415000216

Chen, C., & Neshkova, M. I. (2019). The effect of fiscal transparency on corruption: A panel cross-country analysis. *Public Administration*, *98*(1), 226–243. https://doi.org/10.1111/padm.12620

Chletsos, M., & Sintos, A. (2021). Hide and seek: IMF intervention and the shadow economy. *Structural Change and Economic Dynamics*, *59*, 292–319. https://doi.org/10.1016/j.strueco.2021.09.008

Chong, S. P. C., Tee, C. M., & Cheng, S. V. (2020). Political institutions and the control of corruption: a cross-country evidence. *Journal of Financial Crime*, *28*(1), 26–48. https://doi.org/10.1108/jfc-05-2020-0094

Coetzee, J. J. (2014). The impact of corruption on development. *Journal of Public Administration*, *49*(3), 821–835. https://ir.nust.na/jspui/bitstream/10628/646/1/JOPA%20ISSN%200036-0767%2c%20Volume%2049%2c%20Number%203%2c%20September%202014%2c%20pp.%20821-835.pdf

Cole, W. M. (2015). Institutionalizing a global anti-corruption regime: Perverse effects on country outcomes, 1984–2012. *International Journal of Comparative Sociology*, *56*(1), 53–80. https://doi.org/10.1177/0020715215578885

Coppedge, M., Gerring, J., Knutsen, C. H., Lindberg, S. I., Teorell, J., Altman, D., Bernhard, M., Cornell, A., Fish, M. S., Gastaldi, L., Gjerløw, H., Glynn, A., Grahn, S., Hicken, A., Kinzelbach, K., Marquardt, K. L., McMann, K., Mechkova, V., Paxton, P., . . . University of Gothenburg, V-Dem Institute. (2022). *V-Dem Codebook v12*. https://www.v-dem.net/static/website/img/refs/codebookv12.pdf

CSP. (2020). *POLITY5: Political regime characteristics and transitions, 1800-2018*. http://www.systemicpeace.org/inscr/p5manualv2018.pdf

Dalton, M., & Esarey, J. (2023). Measuring Changes in Corruption over Time. *Department of Political Science*.

Daoud, J. I. (2017). Multicollinearity and Regression Analysis. *Journal of Physics. Conference Series*, *949*, 012009. https://doi.org/10.1088/1742-6596/949/1/012009

Duffie, D. (2018). Financial Regulatory Reform After the Crisis: An assessment. *Management Science*, *64*(10), 4835–4857. https://doi.org/10.1287/mnsc.2017.2768

Everett, J., Neu, D., & Rahaman, A. S. (2007). Accounting and the global fight against corruption. *Accounting Organizations and Society*, *32*(6), 513–542. https://doi.org/10.1016/j.aos.2006.07.002

Fazekas, M., & King, L. P. (2018). Perils of development funding? The tale of EU Funds and grand corruption in Central and Eastern Europe. *Regulation & Governance*, *13*(3), 405–430. https://doi.org/10.1111/rego.12184

Ferraz, C., & Finan, F. (2008). EXPOSING CORRUPT POLITICIANS: THE EFFECTS OF BRAZIL'S PUBLICLY RELEASED AUDITS ON ELECTORAL OUTCOMES. *QUARTERLY JOURNAL OF ECONOMICS*, *123*(2), 703–745. https://doi.org/10.1162/qjec.2008.123.2.703

Field, A. (2017). *Discovering statistics using IBM SPSS statistics*. https://dl.acm.org/citation.cfm?id=2502692

Gaspar, V., & Hagan, S. (2016). Corruption: costs and mitigating strategies. *IMF Staff Discussion Note*, *16*(05), 1. https://doi.org/10.5089/9781513594330.006

Gephart, M. (2009). Contextualizing Conceptions of corruption: Challenges for the International Anti-Corruption Campaign. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1534589

Goldstein, M. (2000). IMF Structural conditionality: How much is too much? *Social Science Research Network*. https://doi.org/10.2139/ssrn.300885

Gujarati, D. N. (2011). *Econometrics by example*. http://ci.nii.ac.jp/ncid/BB14400609

Halkos, G. E., & Tzeremes, N. G. (2010). Corruption and Economic Efficiency: Panel Data evidence. *Global Economic Review*, *39*(4), 441–454. https://doi.org/10.1080/1226508x.2010.533854

Harrison, E. (2006). Unpacking the anti-corruption agenda: Dilemmas for anthropologists. *Oxford Development Studies*, *34*(1), 15–29. https://doi.org/10.1080/13600810500495915

Heeks, R., & Mathisen, H. (2012). Understanding success and failure of anti-corruption initiatives. *Crime Law and Social Change*, *58*(5), 533–549. https://doi.org/10.1007/s10611-011-9361-y

Heywood, P. M., & Rose, J. (2014). "Close but no Cigar": the measurement of corruption. *Journal of Public Policy*, *34*(3), 507–529. https://doi.org/10.1017/s0143814x14000099

House, B., Vines, D., & Corden, W. M. (2016). International Monetary Fund. In *Palgrave Macmillan UK eBooks* (pp. 158–191). https://doi.org/10.1057/9781137553799_18

Huntington, S. P. (1968). *Political order in changing societies*. http://ci.nii.ac.jp/ncid/BA78588108

IMF. (1997). *Good governance: The IMF's role*. International Monetary Fund. Policy paper. https://www.imf.org/external/pubs/ft/exrp/govern/govindex.htm.

IMF. (2016). *Letter of intent, memorandum of economic and financial policies, and technical. memorandum of understanding* [Ukraine]. International Monetary Fund. https://www.imf.org/external/np/loi/2016/ukr/090116.pdf

IMF. (2018). Review of 1997 guidance note on governance — a proposed framework for enhanced fund engagement. International Monetary Fund. Policy paper. http://www.imf.org/en/Publications/PolicyPapers/Issues/2018/04/20/pp030918-review-of-1997-guidance-note-on-governance.

IMF. (2019). Fiscal monitor reports fiscal monitor: Curbing corruption. International Monetary Fund. https://www.imf. org/en/Publications/FM/Issues/2019/03/18/fiscal-monitor-april-2019.

IMF. (2023a). *IMF conditionality*. https://www.imf.org/en/About/Factsheets/Sheets/2023/IMF-Conditionality

IMF (2023b). *Review of implementation of the 2018 framework for enhanced fund engagement on xxx governance*. https://www.imf.org/en/Publications/Policy-Papers/Issues/2023/04/11/Review-of-Implementation-of-The-2018-Framework-for-Enhanced-Fund-Engagement-on-Governance-532166?cid=pr-com-PPEA2023015

Joyce, J. P. (2003). Promises made, promises broken: A model of IMF program implementation. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.462341

Kaufmann, D., & Bellver, A. (2005). Transparenting Transparency: Initial Empirics and policy applications. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.808664

Kaya, A., & Reay, M. (2019). How did the Washington consensus move within the IMF? Fragmented change from the 1980s to the aftermath of the 2008 crisis. *Review of International Political Economy*, *26*(3), 384–409. https://doi.org/10.1080/09692290.2018.1511447

Kentikelenis, A. E., Stubbs, T. H., & King, L. P. (2016). IMF conditionality and development policy space, 1985–2014. *Review of International Political Economy*, *23*(4), 543–582. https://doi.org/10.1080/09692290.2016.1174953

Kentikelenis, A., & Stubbs, T. (2023). Replication data for: A Thousand Cuts: Social Protection in the Age of Austerity [Dataset]. In *Harvard Dataverse*. https://doi.org/10.7910/dvn/dpv99l

Kern, A., Reinsberg, B., & Rau-Göhring, M. (2019). IMF conditionality and central bank independence. *European Journal of Political Economy/Europäische Zeitschrift Für Politische Ökonomie*, *59*, 212–229. https://doi.org/10.1016/j.ejpoleco.2019.03.002

Khan, R. E. A., & Farooq, S. (2019). Corruption, political instability and sustainable development: the interlinkages. *Journal of Quantitative Methods*, *3*(1), 56–83. https://doi.org/10.29145/2019/jqm/030104

Klitgaard, R. (1988). *Controlling corruption*. https://doi.org/10.1525/9780520911185

Kolstad, I., & Wiig, A. (2009). Is transparency the key to reducing corruption in Resource-Rich countries? *World Development*, *37*(3), 521–532. https://doi.org/10.1016/j.worlddev.2008.07.002

Kurtz, M. J., & Schrank, A. (2007). Growth and Governance: models, measures, and mechanisms. *The Journal of Politics*, *69*(2), 538–554. https://doi.org/10.1111/j.1468-2508.2007.00549.x

Lang, V. (2020). The economics of the democratic deficit: The effect of IMF programs on inequality. *the Review of International Organizations*, *16*(3), 599–623. https://doi.org/10.1007/s11558-020-09405-x

Lang, V. F. (2016). The Economics of the Democratic Deficit: The effect of IMF programs on inequality. *Social Science Research Network*. https://doi.org/10.2139/ssrn.2883120

Levy, B., & Kpundeh, S. (2004). Building State Capacity in Africa : New approaches, emerging lessons. *World Bank Publications*. https://ideas.repec.org/b/wbk/wbpubs/14878.html

Lyrio, M. V. L., Lunkes, R. J., & Taliani, E. T. C. (2018). Thirty years of studies on transparency, accountability, and corruption in the public sector: the state of the art and opportunities for future research. *Public Integrity*, *20*(5), 512–533. https://doi.org/10.1080/10999922.2017.1416537

Majeed, M. T. (2014). Corruption and trade. *Journal of Economic Integration*, *29*(4), 759–782. https://doi.org/10.11130/jei.2014.29.4.759

Mauro, P. (1995). Corruption and growth. *The Quarterly Journal of Economics*, *110*(3), 681–712. https://doi.org/10.2307/2946696

Mauro, P. (2004). The persistence of corruption and slow economic growth. *IMF Staff Papers*, *51*(1), 1–18. https://doi.org/10.2307/30035860

Mellinger, C. D., & Hanson, T. A. (2020). Methodological considerations for survey research: Validity, reliability, and quantitative analysis. *Linguistica Antverpiensia New Series – Themes in Translation Studies*, *19*. https://doi.org/10.52034/lanstts.v19i0.549

Min, K. (2019). The effectiveness of anti-corruption policies: measuring the impact of anti-corruption policies on integrity in the public organizations of South Korea. *Crime, Law and Social Change*, *71*(2), 217–239. https://doi.org/10.1007/s10611-019-09814-z

Mishra, G. S., Mokhtarian, P. L., Clewlow, R. R., & Widaman, K. F. (2019). Addressing the joint occurrence of self-selection and simultaneity biases in the estimation of program effects based on cross-sectional observational surveys: case study of travel behavior effects in carsharing. *Transportation*, *46*(1), 95–123. https://doi.org/10.1007/s11116-017-9791-1

Montinola, G. R., & Jackman, R. W. (2002). Sources of Corruption: A Cross-Country Study. *British Journal of Political Science*, *32*(01). https://doi.org/10.1017/s0007123402000066

Morales, L., & Andreosso-O'Callaghan, B. (2012). The current global financial crisis: Do Asian stock markets show contagion or interdependence effects? *Journal of Asian Economics*, *23*(6), 616–626. https://doi.org/10.1016/j.asieco.2012.09.002

Mungiu-Pippidi, A. (2011). Contextual Choices in Fighting Corruption: Lessons learned. *Social Science Research Network*. https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID2045403_code1272060.pdf?abstractid=2042021&mirid=1&type=2

Nelson, S. C., & Wallace, G. P. R. (2016). Are IMF lending programs good or bad for democracy? *the Review of International Organizations*, *12*(4), 523–558. https://doi.org/10.1007/s11558-016-9250-3

Oberdabernig, D. A. (2013). Revisiting the effects of IMF programs on poverty and inequality. *World Development*, *46*, 113–142. https://doi.org/10.1016/j.worlddev.2013.01.033

Olken, B. A., & Pande, R. (2012). Corruption in developing countries. *Annual Review of Economics*, *4*(1), 479–509. https://doi.org/10.1146/annurev-economics-080511-110917

Olsson, S. A. (2014). Corruption and Political Participation: A Multilevel Analysis. *University of Gothenburg*.

Otusanya, O. (2011). Corruption as an obstacle to development in developing countries: a review of literature. *Journal of Money Laundering Control*, *14*(4), 387–422. https://doi.org/10.1108/13685201111173857

Ozili, P. K. (2023). The acceptable R-Square in empirical modelling for social science research. In *Advances in knowledge acquisition, transfer, and management book series/Advances in knowledge acquisition, transfer and management book series* (pp. 134–143). https://doi.org/10.4018/978-1-6684-6859-3.ch009

Pender, J. (2001). From "Structural Adjustment" to "Comprehensive Development Framework": Conditionality transformed? *Third World Quarterly*, *22*(3), 397–411. https://doi.org/10.1080/01436590120061679

Pendergast, S. M. (2007). *Corruption and the curse of natural resources*. http://economics.ca/2008/papers/0633.pdf

Persson, A., Rothstein, B., & Teorell, J. (2010). The failure of Anti-Corruption Policies A Theoretical Mischaracterization of the Problem. *THE QUALITY OF GOVERNMENT INSTITUTE*. https://gupea.ub.gu.se/bitstream/2077/39039/1/gupea_2077_39039_1.pdf

Persson, T., & Tabellini, G. (2004). Constitutions and economic policy. □*the* □*Journal of Economic Perspectives/*□*the* □*Journal of Economic Perspectives*, *18*(1), 75–98. https://doi.org/10.1257/089533004773563449

Prairie, Y. T. (1996). Evaluating the predictive power of regression models. *Canadian Journal of Fisheries and Aquatic Sciences*, *53*(3), 490–492. https://doi.org/10.1139/f95-204

Pulok, M. H., & Ahmed, M. U. (2017). Does corruption matter for economic development? Long run evidence from Bangladesh. *International Journal of Social Economics*, *44*(3), 350–361. https://doi.org/10.1108/ijse-05-2015-0132

Rehman, F., Ali, A., & Nasir, M. (2007). Corruption, trade openness, and Environmental Quality: A panel data analysis of selected South Asian countries. *Pakistan Development Review*, *46*(4II), 673–688. https://doi.org/10.30541/v46i4iipp.673-688

Reinikka, R., & Svensson, J. (2005). Fighting Corruption to Improve Schooling: Evidence from a Newspaper Campaign in Uganda. *Journal of the European Economic Association*, *3*(2–3), 259–267. https://doi.org/10.1162/jeea.2005.3.2-3.259

Reinsberg, B., Kentikelenis, A., & Stubbs, T. (2019). Creating crony capitalism: neoliberal globalization and the fueling of corruption. *Socio-economic Review*, *19*(2), 607–634. https://doi.org/10.1093/ser/mwz039

Reinsberg, B., Stubbs, T., Kentikelenis, A., & King, L. (2019). Bad governance: How privatization increases corruption in the developing world. *Regulation & Governance*, *14*(4), 698–717. https://doi.org/10.1111/rego.12265

Rose-Ackerman, S. (1999). Corruption and government: causes, consequences, and reform. *Choice Reviews Online*, *37*(06), 37–3570. https://doi.org/10.5860/choice.37-3570

Rothstein, B. (2011). Anti-corruption: the indirect 'big bang' approach. *Review of International Political Economy*, *18*(2), 228–250. https://doi.org/10.1080/09692291003607834

Rothstein, B. (2018). Fighting Systemic corruption: the Indirect Strategy. *Daedalus*, *147*(3), 35–49. https://doi.org/10.1162/daed_a_00501

Sandholtz, W., & Gray, M. M. (2003). International integration and national corruption. *International Organization*, *57*(4), 761–800. https://doi.org/10.1017/s0020818303574045

Scott, G. E. (2011). The IMF, Conditionality and Corruption in Sub-Saharan Africa (SSA). *The Indian Economic Journal*, *59*(3), 71–86. https://doi.org/10.1177/0019466220110306

Shabbir, G., & Anwar, M. (2007). Determinants of corruption in developing countries. *The Pakistan Development Review*, *46*(4II), 751–764. https://doi.org/10.30541/v46i4iipp.751-764

Shabbir, G., Anwar, M., & Adil, S. (2016). Corruption, political stability and economic growth. *The Pakistan Development Review*, *55*(4I-II), 689–702. https://doi.org/10.30541/v55i4i-iipp.689-702

Shaxson, N. (2007). Oil, corruption and the resource curse. *International Affairs*, *83*(6), 1123–1140. https://doi.org/10.1111/j.1468-2346.2007.00677.x

Shleifer, A., & Vishny, R. W. (1993). Corruption. *The Quarterly Journal of Economics*, *108*(3), 599–617. https://doi.org/10.2307/2118402

Staiger, D., & Stock, J. H. (1997). Instrumental Variables Regression with Weak Instruments. *Econometrica*, *65*(3), 557. https://doi.org/10.2307/2171753

Steinwand, M. C., & Stone, R. W. (2008). The International Monetary Fund: A review of the recent evidence. *The Review of International Organizations*, *3*, 123–149. https://doi.org/10.1007/s11558-007-9026-x

Stiglitz, J. (2002). *Globalization and its discontents*.

Stock, J. H., & Watson, M. W. (2020). *Introduction to Econometrics*. https://ci.nii.ac.jp/ncid/BB17568057

Stubbs, T., Reinsberg, B., Kentikelenis, A., & King, L. (2018). How to evaluate the effects of IMF conditionality. □*the* □*Review of International Organizations*, *15*(1), 29–73. https://doi.org/10.1007/s11558-018-9332-5

Svensson, J. (2005). Eight Questions about Corruption. □*the* □*Journal of Economic Perspectives/*□*the* □*Journal of Economic Perspectives*, *19*(3), 19–42. https://doi.org/10.1257/089533005774357860

Tanzi, V., & Davoodi, H. R. (1997). Corruption, public investment, and growth. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.882701

Teorell, J., Coppedge, M., Skaaning, S., & Lindberg, S. I. (2016). Measuring Electoral Democracy with V-Dem Data: Introducing a New Polyarchy Index. *Social Science Research Network*. https://doi.org/10.2139/ssrn.2740935

Toft, E. S., & De Soysa, I. (2021). Rich and Naïve? Assessing the Effects of Norwegian Aid on Political corruption, 1980–2018. *Forum for Development Studies*, *48*(1), 1–28. https://doi.org/10.1080/08039410.2020.1829028

Treisman, D. (2000). The causes of corruption: a cross-national study. *Journal of Public Economics*, *76*(3), 399–457. https://doi.org/10.1016/s0047-2727(99)00092-4

Uberti, L. J. (2022). Corruption and growth: Historical evidence, 1790–2010. *Journal of Comparative Economics*, *50*(2), 321–349. https://doi.org/10.1016/j.jce.2021.10.002

Vreeland, J. R. (2003). *The IMF and economic development*. https://doi.org/10.1017/cbo9780511615726

Vukovic, V. (2021). The politics of bailouts: Estimating the causal effects of political connections on corporate bailouts during the 2008–2009 US financial crisis. *Public Choice*, *189*(1–2), 213–238. https://doi.org/10.1007/s11127-020-00871-w

Walton, G., & Jones, A. (2017). The Geographies of Collective Action, Principal-Agent Theory and Potential Corruption in Papua New Guinea. *Social Science Research Network*. https://doi.org/10.2139/ssrn.2993709

Wolf, T. A., & Gürgen, E. (2000). Improving governance and fighting corruption in the Baltic and CIS countries: the role of the IMF. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.879301

Wooldridge, J. M. (2012). *Introductory Econometrics: a Modern Approach*. http://ci.nii.ac.jp/ncid/BA72932652

World Bank. (2020). World Development Indicators. https://databank.worldbank.org/source/world-development-indicators.

9. Appendices

Appendix A: Corruption keywords

(direct) Corruption: corruption; graft; corrupt; abuse; abuse of public office; public office for private gain; bribe; bribery; abuse by public actors; theft; embezzlement; abuse public office; nepotism; procurement; inflated public procurement costs; distorted procurement costs; inflated procurement costs; procurement costs; malfeasance; fraud; fraudulent; rent-seeking; cronyism; siphoning of public funds; siphoning of funds; misappropriation; misappropriated funds; vested interests; money laundering; political patronage; convicted officials; crime; criminal groups; financial crimes; threat of prosecution; asset declaration for high-level officials; assets of highranking officials; power purification; receiving any gifts and advantages; misuse; underreporting of wages; suspicious transaction; kickbacks; distort; discretion; discretionary power; Anti-Bribery Corruption; the financing of terrorism (CFT); AML/CFT; anti-money laundering/combating the financing of terrorism.

(direct) Anti-corruption: anti-corruption measures; anti-corruption strategy; anti¬ corruption law; anti-corruption commission; Anti-Corruption Commission; anti-corruption bureau; anticorruption office; whistle-blower protection; procurement rules; anti-money laundering; AML; Convention on Combating Bribery of Foreign Public Officials in International Business Transactions; excessive regulation; red tape; red tape; discretionary power; low wages in the civil service; wages in the civil service; civil service wages; public financial management (PFM); Public Investment Management Assessments (PIMAs)

(indirect) Accountability and Transparency: accountability; transparency; disclosure; oversight; public sector accountability; transparency of budgetary law; public budget transparency; transparent budget; fiscal transparency; improve fiscal reporting; independent scrutiny; external scrutiny; off-budget transactions; tax loopholes; disclosure of procurement; audit agency; supreme audit institutions; SAIs/SAI; internal control rules; audit; audited budget; publish statistics; reporting of cash transactions and international funds transfers; report transfers; report transactions; government transactions; government receipts

(indirect) Other corruption: distrust of government; illicit; illegal; public procurement; tax collection; tax administration; tax evasion; tax compliance; customs compliance; the rule of law; digitalization; e-government; customs; licensing; licensing procedures; licensing rules; integrity; inclusive growth; policy distortion; regulatory capture; preferential treatment; data inconsistencies; inconsistencies in data; excessive intervention; excessive public intervention; efficiency of public spending; expenditure framework; fiscal governance; uneven administrative decisions; uneven implementation of the law; partial and discriminatory enforcement of laws; implementation bottlenecks; "pressures" under the tax

system; "selective decisions" by officials; predictability of the tax regime; transparency and fairness of privatization; transparency of budgetary process; and connected lending.

Appendix B: Coding commands

While coding the IV, the programs Text Editor and Python were downloaded and used. The dataset of Kentikelenis et al. (2016) was used for the coding. Before using it, the tab 'Notes' was deleted, so that only the tab 'Dataset' was left.

1. First it was necessary to install the NLTK. Therefore, the following command was entered in my terminal:

```
pip install pandas openpyxl nltk
```

2. Then, the standard text mining procedures needed to be executed: converting text to lowercase, removing punctuation, dates, numbers, and stop words, and performing lemmatization to reduce words to their root forms:

```
import pandas as pd import string import re import nltk from
nltk.corpus import stopwords from nltk.tokenize import word_tokenize
from nltk.stem import WordNetLemmatizer

nltk.download('punkt') nltk.download('stopwords')
nltk.download('wordnet')
```

3. Here, the following error appeared, as it could not be downloaded automatically:

```
[nltk_data] Error loading punkt: False >>>
nltk.download('stopwords') [nltk_data] Error loading stopwords:
False >>> nltk.download('wordnet') [nltk_data] Error loading
wordnet: False
```

4. Therefore, the NLTK data was manually downloaded from this site:

http://www.nltk.org/nltk_data/. The maps 'punkt', 'stopwords', 'wordnet' were downloaded. After downloading, they were combined in a map called 'nltk_data'.

5. Then, to check whether the NLTK could find the data the following command was ran:

```
import nltk
nltk.data.path.append('/Users/babettemanders/Downloads/nltk_data')
import nltk nltk.data.find('tokenizers/punkt')
nltk.data.find('corpora/stopwords')
nltk.data.find('corpora/wordnet')
```

6. After this led to no more errors, the script was rerun:

```
import string import re import nltk from nltk.corpus import
stopwords from nltk.tokenize import word_tokenize from nltk.stem
import WordNetLemmatizer def clean_text(text): text =
str(text).lower() # Ensure text is converted to string and lowercase
text = re.sub(r'\d+', '', text) # Remove digits text =
text.translate(str.maketrans('', '', string.punctuation)) # Remove
punctuation return text def remove_stopwords(text): stop_words =
set(stopwords.words('english')) word_tokens = word_tokenize(text)
filtered_text = [word for word in word_tokens if word.lower() not in
stop_words] return ' '.join(filtered_text) def lemmatize_text(text):
lemmatizer = WordNetLemmatizer() word_tokens = word_tokenize(text)
lemmatized_text = [lemmatizer.lemmatize(word) for word in
word_tokens] return ' '.join(lemmatized_text)
```

7. Then, these functions were applied to the raw condition texts in the datafile:

```
import pandas as pd file_path =
'/Users/babettemanders/Downloads/IMFMonitor_Conditions_Raw.xlsx' df
= pd.read_excel(file_path) df['Cleaned_Text'] = df['Condition
Text'].apply(clean_text) df['Cleaned_Text'] =
df['Cleaned_Text'].apply(remove_stopwords) df['Cleaned_Text'] =
df['Cleaned_Text'].apply(lemmatize_text) output_file_path =
'/Users/babettemanders/Downloads/IMFMonitor_Conditions_Processed.xls
x' df.to_excel(output_file_path, index=False) This resulted in a new
datafile (IMFMonitor_Conditions_Processed) containing the colum
‘Cleaned_Text’
```

Now, all the standard text mining procedures were applied on the raw conditions texts

8. After, the keywords were defined in Python:

```
keywords = { 'corruption', 'graft', 'corrupt', 'abuse', 'abuse of
public office', 'public office for private gain', 'bribe',
'bribery', 'abuse by public actors', 'theft', 'embezzlement', 'abuse
public office', 'nepotism', 'procurement', 'inflated public
procurement costs', 'distorted procurement costs', 'inflated
procurement costs', 'procurement costs', 'malfeasance', 'fraud',
'fraudulent', 'rent-seeking', 'cronyism', 'siphoning of public
funds', 'siphoning of funds', 'misappropriation', 'misappropriated
funds', 'vested interests', 'money laundering', 'political
patronage', 'convicted officials', 'crime', 'criminal groups',
'financial crimes', 'threat of prosecution', 'asset declaration for
high-level officials', 'assets of highranking officials', 'power
purification', 'receiving any gifts and advantages', 'misuse',
'underreporting of wages', 'suspicious transaction', 'kickbacks',
'distort', 'discretion', 'discretionary power', 'Anti-Bribery
Corruption', 'the financing of terrorism (CFT)', 'AML/CFT', 'anti-
money laundering/combating the financing of terrorism', 'anti-
corruption measures', 'anti-corruption strategy', 'anticorruption
law', 'anti-corruption commission', 'Anti-Corruption Commission',
'anti-corruption bureau', 'anticorruption office', 'whistle-blower
protection', 'procurement rules', 'anti-money laundering', 'AML',
'Convention on Combating Bribery of Foreign Public Officials in
International Business Transactions', 'excessive regulation', 'red
tape', 'discretionary power', 'low wages in the civil service',
'wages in the civil service', 'civil service wages', 'public
financial management (PFM)', 'Public Investment Management
Assessments (PIMAs)', 'accountability', 'transparency',
'disclosure', 'oversight', 'public sector accountability',
'transparency of budgetary law', 'public budget transparency',
'transparent budget', 'fiscal transparency', 'improve fiscal
reporting', 'independent scrutiny', 'external scrutiny', 'off-budget
transactions', 'tax loopholes', 'disclosure of procurement', 'audit
agency', 'supreme audit institutions', 'SAIs/SAI', 'internal control
```

```
rules', 'audit', 'audited budget', 'publish statistics', 'reporting
of cash transactions and international funds transfers', 'report
transfers', 'report transactions', 'government transactions',
'government receipts', 'distrust of government', 'illicit',
'illegal', 'public procurement', 'tax collection', 'tax
administration', 'tax evasion', 'tax compliance', 'customs
compliance', 'the rule of law', 'digitalization', 'e-government',
'customs', 'licensing', 'licensing procedures', 'licensing rules',
'integrity', 'inclusive growth', 'policy distortion', 'regulatory
capture', 'preferential treatment', 'data inconsistencies',
'inconsistencies in data', 'excessive intervention', 'excessive
public intervention', 'efficiency of public spending', 'expenditure
framework', 'fiscal governance', 'uneven administrative decisions',
'uneven implementation of the law', 'partial and discriminatory
enforcement of laws', 'implementation bottlenecks', 'pressures under
the tax system', 'selective decisions by officials', 'predictability
of the tax regime', 'transparency and fairness of privatization',
'transparency of budgetary process', 'connected lending' }
```

9. Last, the keywords in the cleaned text were counted and converted every condition into a binary indicator:

```
import pandas as pd processed_file_path =
'/Users/babettemanders/Downloads/IMFMonitor_Conditions_Processed.xls
x' df_processed = pd.read_excel(processed_file_path) # Define the
name for the binary indicator column binary_indicator_name =
'Keyword_Mentions_Indicator' # Function to count keywords and
convert to binary indicator def count_keywords(text): words =
text.lower().split() for word in words: if word in keywords: return
1 return 0 df_processed[binary_indicator_name] =
df_processed['Cleaned_Text'].apply(count_keywords) output_file_path
=
'/Users/babettemanders/Downloads/IMFMonitor_Conditions_Processed_Bin
ary.xlsx' df_processed.to_excel(output_file_path, index=False)
```

10. The result

Each condition was analysed to check for the presence of predefined keywords. If a condition included one or more of these keywords, it was considered an anti-corruption conditions and was assigned a value of ‘1’. Conditions without any keywords were considered as no anti-corruption conditions and were assigned a value of ‘0’. This process resulted in a binary indicator, with a value of ‘1’ indicating the presence of at least one anti-corruption condition in a certain program and ‘0’ indicating their absence.

Appendix C: Regional classifications

Eastern Europe and Central Asia (including Mongolia and German Democratic Republic): Albania; Armenia; Azerbaijan; Belarus; Bosnia and Herzegovina; Bulgaria; Croatia; Estonia; Georgia; Kazakhstan; Kosovo; Kyrgyz Republic; Latvia; Lithuania; Moldova; Mongolia; North Macedonia; Romania; Russian Federation; Serbia; Tajikistan; Ukraine.

Latin America and the Caribbean: Argentina; Barbados; Bolivia; Brazil; Colombia; Costa Rica; Dominican Republic; Ecuador; El Salvador; Guatemala; Guyana; Haiti; Honduras; Jamaica; Mexico; Nicaragua; Panama; Paraguay; Peru; Suriname; Uruguay; Venezuela.

The Middle East and North Africa (including Israel and Turkey, excluding Cyprus): Algeria; Egypt; Iraq; Jordan; Morocco; Tunisia; Turkey; Yemen.

Sub-Saharan Africa: Angola; Benin; Burkina Faso; Burundi; Cabo Verde; Cameroon; Central African Republic; Chad; Comoros; Congo, Dem. Rep.; Congo, Rep.; Cote d'Ivoire; Djibouti; Ethiopia; Gabon; Gambia; Ghana; Guinea; Guinea-Bissau; Kenya; Lesotho; Liberia; Madagascar; Malawi; Mali; Mauritania; Mozambique; Niger; Nigeria; Rwanda; Sao Tome and Principe; Senegal; Seychelles; Sierra Leone; Solomon Islands; Togo; Uganda; Zambia; Zimbabwe.

Western Europe and North America (including Cyprus, Australia and New Zealand, but excluding German Democratic Republic): Cyprus; Greece; Hungary; Iceland; Ireland; Portugal.
Asia and Pacific (excluding Australia and New Zealand): Afghanistan; Bangladesh; Cambodia; Indonesia; Korea; Lao PDR; Maldives; Nepal; Pakistan; Papua New Guinea; Philippines; Sri Lanka; Thailand; Vietnam.

Appendix D: Frequency table

Country		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Afghanistan	245	1.0	1.0	1.0
	Albania	449	1.9	1.9	2.9
	Algeria	35	.1	.1	3.1
	Angola	75	.3	.3	3.4
	Argentina	188	.8	.8	4.2
	Armenia	466	2.0	2.0	6.2
	Azerbaijan	251	1.1	1.1	7.3
	Bangladesh	180	.8	.8	8.0
	Barbados	16	.1	.1	8.1
	Belarus	30	.1	.1	8.2
	Benin	305	1.3	1.3	9.5
	Bolivia	219	.9	.9	10.4
	Bosnia and Herzegovina	463	2.0	2.0	12.4
	Brazil	165	.7	.7	13.1
	Bulgaria	417	1.8	1.8	14.9
	Burkina Faso	386	1.6	1.6	16.5
	Burundi	244	1.0	1.0	17.6
	Cabo Verde	90	.4	.4	17.9
	Cambodia	129	.5	.5	18.5
	Cameroon	390	1.7	1.7	20.1
	Central African Republic	260	1.1	1.1	21.2
	Chad	248	1.1	1.1	22.3
	Colombia	127	.5	.5	22.8
	Comoros	93	.4	.4	23.2
	Congo, Dem. Rep.	175	.7	.7	24.0
	Congo, Rep.	175	.7	.7	24.7
	Costa Rica	17	.1	.1	24.8
	Cote d'Ivoire	332	1.4	1.4	26.2
	Croatia	166	.7	.7	26.9
	Cyprus	76	.3	.3	27.2
	Djibouti	211	.9	.9	28.1
	Dominican Republic	258	1.1	1.1	29.2
	Ecuador	98	.4	.4	29.6

	Egypt	120	.5	.5	30.1
	El Salvador	80	.3	.3	30.5
	Estonia	74	.3	.3	30.8
	Ethiopia	114	.5	.5	31.3
	Gabon	266	1.1	1.1	32.4
	Gambia	222	.9	.9	33.4
	Georgia	378	1.6	1.6	35.0
	Ghana	458	1.9	1.9	36.9
	Greece	194	.8	.8	37.7
	Guatemala	45	.2	.2	37.9
	Guinea	393	1.7	1.7	39.6
	Guinea-Bissau	194	.8	.8	40.4
	Guyana	225	1.0	1.0	41.4
	Haiti	272	1.2	1.2	42.5
	Honduras	276	1.2	1.2	43.7
	Hungary	49	.2	.2	43.9
	Iceland	62	.3	.3	44.2
	Indonesia	227	1.0	1.0	45.1
	Iraq	215	.9	.9	46.0
	Ireland	50	.2	.2	46.3
	Jamaica	214	.9	.9	47.2
	Jordan	261	1.1	1.1	48.3
	Kazakhstan	151	.6	.6	48.9
	Kenya	199	.8	.8	49.8
	Korea	55	.2	.2	50.0
	Kosovo	94	.4	.4	50.4
	Kyrgyz Republic	490	2.1	2.1	52.5
	Lao PDR	80	.3	.3	52.8
	Latvia	192	.8	.8	53.6
	Lesotho	171	.7	.7	54.4
	Liberia	210	.9	.9	55.3
	Lithuania	103	.4	.4	55.7
	Madagascar	251	1.1	1.1	56.8
	Malawi	380	1.6	1.6	58.4
	Maldives	24	.1	.1	58.5
	Mali	379	1.6	1.6	60.1

	Mauritania	385	1.6	1.6	61.7
	Mexico	27	.1	.1	61.8
	Moldova	410	1.7	1.7	63.6
	Mongolia	269	1.1	1.1	64.7
	Morocco	12	.1	.1	64.8
	Mozambique	269	1.1	1.1	65.9
	Nepal	94	.4	.4	66.3
	Nicaragua	331	1.4	1.4	67.7
	Niger	382	1.6	1.6	69.3
	Nigeria	32	.1	.1	69.5
	North Macedonia	284	1.2	1.2	70.7
	Pakistan	554	2.4	2.4	73.0
	Panama	58	.2	.2	73.3
	Papua New Guinea	60	.3	.3	73.5
	Paraguay	125	.5	.5	74.1
	Peru	170	.7	.7	74.8
	Philippines	34	.1	.1	74.9
	Portugal	76	.3	.3	75.2
	Romania	580	2.5	2.5	77.7
	Russian Federation	207	.9	.9	78.6
	Rwanda	377	1.6	1.6	80.2
	Sao Tome and Principe	275	1.2	1.2	81.4
	Senegal	250	1.1	1.1	82.4
	Serbia	385	1.6	1.6	84.1
	Seychelles	147	.6	.6	84.7
	Sierra Leone	415	1.8	1.8	86.4
	Solomon Islands	127	.5	.5	87.0
	Sri Lanka	174	.7	.7	87.7
	Suriname	45	.2	.2	87.9
	Tajikistan	335	1.4	1.4	89.3
	Tanzania	291	1.2	1.2	90.6
	Thailand	49	.2	.2	90.8
	Togo	130	.6	.6	91.3
	Tunisia	161	.7	.7	92.0
	Turkey	342	1.5	1.5	93.5
	Uganda	216	.9	.9	94.4

	Ukraine	555	2.4	2.4	96.7
	Uruguay	224	1.0	1.0	97.7
	Venezuela	7	.0	.0	97.7
	Vietnam	62	.3	.3	98.0
	Yemen	205	.9	.9	98.9
	Zambia	231	1.0	1.0	99.8
	Zimbabwe	38	.2	.2	100.0
	Total	23547	100.0	100.0	

Appendix E: VIF values

Independent	VIF
IMF_conditionality	1.023
IMFBUDG	1.385
Democracy_score	1.747
Regime_durability	1.513
GDP_per_capita_log	4.970
Trade_openness	1.577
Urbanization	3.912
Mineral_rents	1.238
Oil_rents_log	1.661